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A TREATISE,

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A TREATISE

ON

THE PLAGUE,

DESIGNED TO PROVE IT

Contagious,

From Facts, collected during the Author's residence in Malta,

WHEN VISITED BY THAT MALADY IN 1813.

WITH

OBSERVATIONS ON ITS PREVENTION,

CHARACTER AND TREATMENT;

TO WHICH IS ANNEXED

An Appendix,

CONTAINING MINUTES OF THE AUTHOR'S EVIDENCE, GIVEN BEFORE THE CONTAGION COMMITTEE OF THE HOUSE OF COMMONS,

ACCOMPANIED BY THEIR

REPORT.

BY

SIR ARTHUR BROOKE FAULKNER, M. D.

Fellow of the Royal College of Physicians; late Physician to His Majesty's Forces, and Physician in Ordinary to His Royal Highness The Duke of Sussex.

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ADVERTISEMENT.

VARIOUS accidents, not to be foreseen, have embarrassed and impeded the execution of this Work, of which it is unnecessary that I should take particular notice. I have alluded to them merely to account for any oversights occasioned by the interruptions of a profession which I could not control.

Among other matters of most importance in the following details, I would especially advert to the topographical description of the casals, in which, from the difficulties of obtaining satisfactory information on so great a variety of particulars, it is very possible I may have been led into some mistakes. However this may be, I feel confident that there are no errors of such magnitude

as in any degree to affect the general question. When I speak of *hills*, *eminences*, and *vallies*, it will, of course, be understood by those who have any knowledge of Malta, that only slight inequalities of the surface are signified, and very different from what we are accustomed to understand by the same expressions applied to other countries.

The facts which I have brought forward both positive and negative, with the view of supporting the doctrine of contagion, may be thought tediously, perhaps unnecessarily multiplied; yet when I contemplated the difficulty of producing conviction on a question so much controverted, it seemed to me a safer alternative to err on the side of prolixity than to risk the inferences which might be drawn from a limited evidence. Some objection may also be taken against the long list of quotations cited at p. 194, as they do not all properly bear reference to the Plague. I designed them only to shew how familiar the ancients were with the idea of contagion,

and, therefore, how gratuitous it is to presume that it should have been overlooked in a disease presenting so many striking demonstrations of being propagated by contact, as the one in question. If the reader should have any desire to see this list extended, without the trouble of consulting the originals, he has only to turn to the publications of Mead and Bancroft.

After the pains which I have bestowed to fix the meaning of the terms *contagion* and *infection*, it perhaps was not strictly proper that I should have used them so indiscriminately. This arose merely from a wish to avoid the perpetual recurrence of the same word, and it appeared to me a venial licence, according to the definitions I have adopted. I admit also, that the import of these terms would have been more correctly settled by the *prevalent* use of the best writers of modern times, rather than the standard I have chosen. It was, found however, impossible to avail myself of such authority, since

even the most reputed of the moderns employ them in senses widely at variance*.

It is necessary to remark, in regard to the distances between the casals, stated in the Fourth Chapter, and likewise as laid down in the map prefixed to this Volume, that they are estimated in the former from the confines of one town to the confines of another—whilst in the map, the casals being represented by mere points, on account of the smallness of the scale precluding a fuller delineation, the distances, as measured by the scale, are necessarily greater than in my statements; and thus their apparent disagreement will be fully accounted for.

Upon the whole, I would willingly flatter myself, that whatever may be the defects of this performance, the unprejudiced reader

* The truth of this will be placed in a striking point of view by the evidence of the different medical authorities, examined before the Contagion Committee of the House of Commons last year.

who shall honor me with a patient attention, will still see sufficient grounds to bear out the view of the question which I have been led to entertain.

Cheltenham, 24th August, 1820.

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EPISTLE DEDICATORY

TO THE

Royal College of Physicians,

OF LONDON.

GENTLEMEN,

IT is some time since I first conceived the purpose of submitting the results of my experience in the Plague to the public eye; but various duties and occupations connected with

my profession, and little comporting with that frame of mind which is suited to writing on so difficult a subject, have hitherto prevented my undertaking the task. Finding the same hindrances daily to accumulate, I should probably for ever dismiss the design from my thoughts, especially as the Plague has of late years engrossed the attention of so many respectable writers :—but the following reasons impose an obligation to bring this Volume before the Public, which I feel no longer at liberty to set aside; namely, the justice I owe to the question,

and to myself, by rendering my evidence, delivered before the Committee of the House of Commons, more complete; and a desire more effectually to meet the wishes of your College, who have done me the honor to request a communication on this subject, for a place in their transactions.

To whom could I have so fitly dedicated this Treatise as to your Society, in which I have had the privilege of fellowship for above fourteen years? Even if the station which the Royal College of Physicians occupies, at the head of the

Medical Profession in this Country, did not at once point it out as the proper authority to which these pages ought to be inscribed, the flattering reception of the Paper which I presented on the subject last year, claims this mark of my respect as a debt of gratitude.

Whether the Plague be a contagious disease or otherwise, is a question involving not only the most important consequences to mankind at large, but, so far as it is interwoven with the commercial welfare of Nations, is to ours one of deep and peculiar interest; and this

interest is not a little heightened by the late reference of the subject to the Legislature.

The arguments contained in my communication to your College, you were pleased to regard as conclusive, in demonstrating the contagious character of the malady; and I had the pleasure of finding that the Report presented to the Secretary of State was in strict coincidence with my own opinions. This Report was, moreover, not less a precise anticipation of that given by the Contagion-Committee of the House of Commons, nearly a year afterwards. It must, there-

fore, be held satisfactory, that the same conclusions should have been arrived at, by trains of investigation, thus separate and independent of each other.

So far as the fate of the question was liable to affect the commercial interests of the Country, whilst so many attempts were making to throw discredit upon the laws of Quarantine, Parliament, no doubt, consulted a wise policy, in determining to invest its decision with all the authority of legislative enactment; as this would probably put an end to discontent, and all differences of sen-

timent in the mercantile world, respecting the value of those laws, much more effectually than any mere professional opinions could be expected to do.

The Report of the Committee having determined the Plague to be, in the strictest sense of the term, *contagious*, I have deemed it necessary, in consideration of the weight attached to my evidence, to lay before you a more extended and connected statement of facts, upon which my conclusions were founded, than the circumscribed course of my examination before the Committee

would allow me to enter into. I have, besides, endeavoured to illustrate more copiously, some of the leading points relative to which I was interrogated, that they may appear with the perspicuity in which they present themselves to my own mind. For it will be allowed, that the evidence of a person unaccustomed to public speaking, and on a subject where so much unembarrassed self-possession was necessary, to guard against the least appearance of inconsistency or mis-statement, was little likely to do justice to the information

he could afford, or to convey his opinions in all the force of which they are susceptible.

As, in the prosecution of my design, of demonstrating the Plague to be contagious, the most scrupulous caution is necessary in reference to facts, I have accordingly abstained from adducing any, (so far as I am conscious,) but such as may be relied upon with perfect confidence; for, if not altogether too notorious to need support, their authenticity may be substantiated by documents the most satisfactory. And when I am led to the citation of any facts of more

than ordinary importance, I have been careful that they should be produced, accompanied by their proper testimonies, when such production is of importance; so that, should the reasoning appear conclusive, it may be trusted as resting upon a solid foundation.

I have already noticed the motives which have swayed me to venture the publication of this Work, though under circumstances very disadvantageous to the undertaking; and I would trust, that these circumstances may not be under-rated in my claims to indulgence for such

imperfections, as more leisure, and a mind more disengaged might have enabled me to detect, and to rectify. For the fidelity of those statements, which relate to things that came under my personal observation, I hold myself responsible; and should my deductions from them be erroneous, I cannot but acknowledge that they are the offspring of mature reflection. Keeping the laws of induction, as far as possible in view, I am, in no instance, conscious of having ventured to draw any inferences, which my experience did not appear to me to war-

rant, during my engagement in the treatment of the disorder; and, whatever opinions resulted from that experience, I have as carefully endeavoured to correct, and to fix, by re-consideration, with a mind unbiassed by any predilection for theories or for authorities. There is, therefore, one favor, which, in justice to myself, I may be permitted to request—that before the reader makes his mind up to pronounce judgment upon the merits or demerits of this performance, he shall be able to declare that he came to the subject, as I have done myself, without prejudice,

or leaning for one side of the question or the other.

It may be seen, by referring to a communication which I transmitted to the Edinburgh Medical and Surgical Journal, during my service in the late Plague in Malta, published in April, 1814, and which was the hasty produce of the few moments I could snatch from my anxious duties, that, unhappily, every endeavour on the part of the Medical Authorities, employed upon that occasion, to arrive at any clearer notions of the pathology of the Plague, or its mode of treatment, had alike

failed. To this communication I would the more especially beg your attention, as a document, the fidelity of which is in some measure guaranteed, in consequence of having been written whilst the transactions were yet pending, and because the facts therein stated, have remained for the space of five years uncontradicted, though open to the comments of every person engaged with me on that service. Yet, although our hopes of acquiring more rational and scientific views of this mysterious disease, were so miserably disappointed, I would still per-

suade myself, that our opportunities have not been unproductive of some useful information, in regard, more especially, to the means by which attendants on the sick, may escape infection during the exercise of their hazardous duties. Until a Physician can have some assurance that he may prosecute his clinical investigations in safety, there is but little hope that his experience should be rendered either productive to himself, or available to others. And, even if a more efficacious practice in this disease were for ever denied to our short-sighted Art, it is

surely something to be in possession of facts, to disarm the disease so far of its terrors, as to shew that the consolations of sympathy need not be withheld from any apprehension of danger, in the last moments of hopeless suffering.

It having been stated by some who deny the doctrine of Contagion, in reference to the Plague, that, did the propagation of the disorder depend upon such a cause, it could not, by possibility, have overleaped the rigor of the Health-Laws at Malta; I am placed under the necessity of citing a series of

public documents, to prove how far this statement is borne out; and as the allegation is in direct opposition to the tenor of the above-mentioned communication in the Edinburgh Journal, it becomes the more imperative on me to dwell at some length on this department of the subject; though, I confess much against my inclination, as it may seem to attach blame to the then existing administration,* and Medical department, of the Island.

* Few of those who were most about the person and were deepest in the confidence of the Officer at the head of the Malta Government, during my services in the Plague, enter-

When I come to discuss the means of preventing the diffusion of the Plague, I hope to be able to afford every proof which the nature of the case can demand, that the measures of public health adopted at the commencement, and pursued for a considerable time after the malady had visited Malta, so far from being fitted to oppose an effectual barrier to its

---

tained a higher respect for his amiable qualities than myself; and it is a source of sincere satisfaction to think that the present publication, delayed for nearly seven years since the events which it records took place, cannot, by the most distorted interpretation, be regarded as proceeding from any motive personal to himself, or to any one concerned in the affairs of that unhappy crisis.

progress, were, *bona fide*, quite incommensurate to their object. If this can be made out, an essential point will be attained, inasmuch as by having the real cause of the diffusion of the disease brought to view, the very failures of the Health Department, in place of being calculated to weaken our confidence in an *efficient* Code of Health Laws, will serve to bestow upon such a Code much additional value.

But the most important, as it is the most extensive in its bearings, of all the results arising from an investigation of the mis-

takes of that period, is what I am now about to state, and which I have no doubt of being able to substantiate by a series of decisive facts and concatenated evidence; namely, that *the Plague is produced by a specific Contagion, and communicable only by contact or close approximation with infected persons or materials; and, consequently, that by proper precautions it will admit of being completely isolated from passing beyond the subjects of its immediate attack.*

It will be observed, that the proposals contained in my letter to the Board of Health,

and transmitted to that Board on the first announcement of the disease within the walls of Valetta, though not acted upon for nearly three months, were almost a verbatim anticipation of the measures by which its progress was finally arrested. From the very dawning of our misfortunes, I was thoroughly satisfied, that in a judicious system of Police Regulations, supported by an efficient armed force, resided the only hope of our deliverance, and that, indeed, without such an arrangement, all other expedients must only tend, as the event proved, to augment

our miseries by occasioning a greater delay. On account of these proposals, however, I cannot claim any originality, being, in truth, little more than the result of an acquaintance with the errors recorded on some similar occasions, and particularly in a former instance in this very Island, but only shaped and adapted to the circumstances of our perilous situation.

However incredible it may seem, I have actually heard it advanced by some apologists for the weak system of precautions at Malta, that the Government was not warranted to enforce

any stricter measures, until all doubts regarding the nature of the disease were removed; and for this general reason, that as the occasions of alarm for the presence of the Plague, in a spot so much exposed to it as this, might be of frequent occurrence, such measures must be attended with the greatest possible inconvenience, and losses incalculable to trade and commerce. But, let me ask, what is that inconvenience, and what are those losses, in comparison with the expenditure that must inevitably be incurred by procrastination, if, upon any of

those occasions of alarm or suspicion, the disease should unfortunately declare itself to be pestilential; not to speak of the expenditure in human life which every moment must so frightfully accumulate? I have been told that the expenses and losses of every kind produced by the late Plague amounted to little short of a Million sterling, and that the number of victims to its fury was not less than Six Thousand.

When Malta, in the former Plague of 1675, was devoted to a like melancholy fate by doubts and delay, the Faculty of Rome,

in reply to a letter from the Maltese physicians, the purport of which was to require information to adjust their differences about the identity of the disease, and as to the expediency of putting the people into close quarantine, make the following remark, which, as it is expressive of the line that ought to be taken upon all similar emergencies, I shall produce in the words of the original :—" Denique licet aliqui negent eum morbum pestis contagiosæ nomine insigniendum, tamen in casu ancipiti ubi de publica salute agitur, tutior pars

eligenda *etiam cum incommodo rerum,* ne serpet latius malum."

Several vessels in both harbours of Valetta, having become infected from time to time during the prevalence of the contagion, I am sorry it is not in my power to speak satisfactorily regarding the modes of their respective contamination, not having had access to such information about the shipping, as I could venture to use in a discussion of this kind. Doubtless, a very high degree of evidence might have been obtained from this source, as the communica-

tion of the crews with each other, and with the inhabitants, could be so much more easily prevented than in most other cases of isolation. The towns along both sides of the great harbour of Valetta being more or less infected, and the harbour narrow and navigable to the very shores, vessels might have been stationed, as it were, in the very bosom of the disease, so that, by appointing proper guards over a certain number immediately on their arrival from a healthy Port, additional facts of a peculiarly conclusive description might have been arrived at, to prove

whether the state of the air alone could be capable of generating Pestilence: for, if this were the case, vessels in such a situation could not, by possibility, have escaped.

I might, after the example of others, have added much to the number of my proofs of the contagious character of the Plague, by drawing upon stores of cases and recitals, both of remote and recent authority; but it being my intention, that what I have to offer on this subject should be wholly grounded upon the facts at Malta, I shall but rarely detain you with any

reference to other sources; conceiving, if such facts be insufficient to sustain my conclusions, it would be a very profitless employment of time to cast about for authorities in order to supply the deficiencies of my own. And since the great object to be sought after in the investigation of this subject, is the collection of *original* testimonies, I have been guarded that even the information which I obtained at Malta, beside the respectability of its authority, should come with the additional recommendation of having emanated from the very fountain head of experience.

When I venture to draw upon the details of other times, it will be understood as merely with the view of illustrating some particular points by a parity of instances of acknowledged credit.

Before closing my letter, which I regret to find has so far exceeded its appropriate object and limits, I would implore a patient, and I do not despair, it will be an indulgent perusal of these pages: trusting that no objection can be fairly taken, even by the most fastidious of my readers, to the manner in which the following discussion is conducted.

Having but little leisure, and still less inclination, to enter the lists of controversy with any who may differ from myself, this work must be left without an advocate, to stand or fall by its own merits. Whether it possess any redeeming quality to justify my sacrificing so much of your time, or that can present any claim to the distinction of its Dedication, I must not presume to have an opinion; but of this I am certain, if the observation be allowable from one of yourselves, that no one more fully appreciates your high and liberal attainments, or can

be more ambitious of deserving your consideration, than he who has the honor to subscribe himself,

GENTLEMEN,

Your devoted

and

Very faithful Servant,

Arthur Brooke Faulkner.

Cheltenham, May 10, 1820.

PLAN OF THE CITY OF LAVALETTA.

A

TREATISE

ON

THE PLAGUE.

CHAPTER I.

Preliminary Remarks on Malta and Gozo, in respect to certain local advantages, conducive to the Health of the Inhabitants. The Climate—Soil, &c.

VALETTA, which is the chief city of Malta, stands upon a calcareous rock, surrounded on three sides by the sea; and, in consequence of the rectangular position of the streets, is thoroughly perflated on every quarter by the pure sea breeze. It enjoys besides a great convenience in being situated on a declivity, the rock, in many places, sloping into the form of a glacis, so that the heaviest shower of rain, if succeeded by a few

hours of fair weather, entirely disappears from the surface. Valetta is, therefore, not only free from damp, but always remarkably clean, being provided with subterraneous channels to drain off all impurities. The houses are, in general, of a very superior order of architecture, many of them much more resembling palaces than the habitations of private persons. To these advantages it may be added, that every part of the town is abundantly supplied with excellent fresh water, by means of an aqueduct, and by public and private cisterns. When we contemplate a combination of circumstances so peculiarly favourable, there is little difficulty in accounting for the remarkable good health enjoyed by the inhabitants of this populous city—a blessing of which they seldom experience any considerable interruption.

The rectangular plan of Valetta is calculated to afford peculiar facilities to a vigilant Police for arresting the progress of a contagious disease, by enabling them, at a glance, to see and to check any disorderly conduct

or disobedience to their commands. About a dozen of centinels, stationed at the intersections of the streets, might observe every thing going on from one end of the town to the other, and without moving from their stations. In short, if a Lazaretto had been designed upon a large scale, nothing could have more happily answered the purpose than this city, in point of situation, salubrity, and the disposition of its main streets.

The promontory on which Valetta is built, was anciently called Scheb-e-ras, signifying in Arabic, *A place elevated above another;* and it was, in fact, on account of its commanding and healthful position, that this part of Malta was selected, in preference to every other, for the site of the Grand Master's Palace, and the chief city of the Island.

In respect to the produce of the soil, there is hardly a foot of the rock which has a covering of mould that is not eagerly laid under contribution either for raising corn, cotton, fruits, or garden-stuffs, and every season

yields the most abundant crops of each; so abundant, indeed, is the produce, that, Sicily itself, though the once-famed Granary of Rome, fails to produce any thing like so great a return, in proportion to the extent of surface under cultivation, as this little spot.

Were it not for the rude and unsightly interference of quarries and stone ditches, the Island would present a pleasing aspect, as every little paddoc is cultivated with so much care and neatness; but the face of the country, when viewed in perspective, is certainly far from prepossessing. A general officer, on his first visit to Malta, being asked what he thought of the *Country*, replied, in terms very expressive of its appearance, that it was much more like to a "stone-cutter's yard."—Nearly the whole of the Island, lying to the westward, is a barren waste, presenting little beside the bare bones of Nature, which, in all probability, will never be clothed. This arises from the difficulty of covering its rugged inequalities with earth; and because the rain would more rea-

dily wash it away in those places than where the rock is more horizontal. To guard against this mischief as much as possible, the fields are narrowly inclosed by walls, in some places of considerable height, which serve as a shelter against the combined force of storm and rain. I have gone into this detail of the soil* and surface, in order that the

* Bridone has the following remarks on this subject, which, as they so clearly agree with the statement here presented, I shall make no apology for extracting :

" The aspect of the Country is far from being pleasing. The whole Island is a great rock of very white freestone; and the soil that covers the rock in many places is not more than five or six inches deep; yet, what is singular, we found the crop, in general, was exceedingly abundant."

And, in another place,—" The industry of the Maltese in cultivating their little Island is inconceivable. There is not an inch of ground lost in any part of it; and, when there was not soil enough, they have brought over ships and boats loaded with it, from Sicily. The whole Island is full of inclosures of freestone, which gives the face of the Country a very uncouth and very barren aspect. The inclosures are very small and irregular, according to the inclination of the ground, This, they say, they are obliged to observe, notwithstanding the deformity it occasions ; otherwise the floods to which they are subject, would soon carry off their soil."

advocates for the generation of Plague, by noxious exhalation from the ground, may see how far they are deprived of the benefit of such an hypothesis, when applied to a country like Malta, and to a city like Valetta.

To the above description it is essential to annex, that there are only three spots on the habitable part of the rock which can deserve to be called marshy, or even moist, the Marsa, Messida, and Puales; but it will hereafter be shewn, that these places exerted no sort of influence in producing the Plague being not only remote from the towns which were first assailed, but having, indeed, very few cases of the disease in their vicinity. This was the more remarkable in respect to Messida, as it is situated near to a populous place or suburb of Valetta, called the Pieta: moreover, there are neither rivers, plantations, (except a few orange groves), or morasses, in any part of the Island.

Malta enjoys the advantage of some of the finest ports and harbours in the Mediterranean; and I have, therefore, been sur-

prised, that some of those harbours which lie most out of the reach of communication with the inhabitants, have not from early times, been pitched upon as places for performing the quarantine of suspected vessels. It will be seen in a subsequent part of this Volume, that when I submitted a proposition to the Government of Malta for sending all vessels suspected of having the Plague into one of those harbours, the idea had not hitherto been acted upon. The information which I possessed on this subject, exclusively bore reference to Saint Paul's Bay, as the only one which I conceived perfectly adapted for a secure anchorage in all weathers. I have heard it observed, however, that there are other harbours which, on an emergency, might be occupied at certain seasons as quarantine stations, the principal of which are Marsascala to the eastward, and Marsascirocco towards the south-west, each capable of containing a good number of vessels: and at the very extremity of the Island towards the west, there is a creek, or cove, which

is said to be well adapted as a road even for ships of considerable burthen. But though any, or all of these ports, might be convertible into temporary quarantine harbours, doubtless Saint Paul's Bay * is, of all others, the most

* The following description given of this harbour by Briarley, Master of Lord Nelson's ship during the siege of 1801, was that upon which I founded the above-mentioned proposition to the Government—" The harbour of St. Paul's is open to easterly and north-east winds; notwithstanding which, it is safe for small ships, as the ground is very good; and while the cables hold, no danger, as the anchors will never start. The best anchorage is abreast the small harbour on the starboard hand going in, from ten to six fathoms soft mud and clay. Small ships may haul into the little harbour and lash together in a tier, having an anchor out to S. S. E., and no winds can hurt them. There is no danger going in, except a small reef off the point of Salmonetta, about half a cable in length; give it a birth of about a cable, and this will carry you clear of every thing."

That there might be no mistake, I also consulted the Master-Attendant of the Malta Dock-Yard, and obtained from him a letter, couched in these terms :—

" The state of my health will not allow me to give you so full an account of St. Paul's Bay as I could wish, but trust the undermentioned will answer your purpose. The only danger in going into the Bay is a short reef of rocks that extend from an Island on the north side, called Solo-

safely circumstanced for vessels to ride out the severity of the winter gales. Indeed the experiment has already been tried with perfect success; and since my proposal was first submitted for sending suspected vessels to this Bay to perform their quarantine, it has been much occupied, and found so convenient, that ships have an-

mon's Island, (Salmonetta), by holding about half a cable's length from it, you will keep clear. Having passed this Island, and standing into the bay, you will open a small Bay on your starboard hand, which is nearly opposite St. Paul's Castle. In this place, during the blockade which I was nineteen months on, we put all our prizes; and many of the vessels belonging to the Island lay there also. I have been anchored in a seventy-four gun ship in St. Paul's Bay in a heavy gale from the N. E., with a great sea, and obliged to strike lower yards and top-masts, and the prizes have lain as quiet in this small Bay, as if they had been in the most secure part of Valetta Harbour, and this was during the winter months."

(Sgned) "W. LAWSON."

Master-Attendant of
Valetta Dock-Yard.

chored there throughout the most inclement season, without any accident or untoward circumstance, worthy of being noticed. One especial advantage possessed by St. Paul's Bay arises from the contiguity of the small Island of Salmonetta, which, I believe, is not much less than half a mile in length, and would admit of a commodious Lazaretto being erected upon it, besides affording the necessary facilities for embarking and disembarking in all weathers. This little Island was used, during the late Plague, for the erection of temporary magazines, to receive infected stores. It was likewise occupied by the sick and suspected crews of vessels performing quarantine, and found extremely well adapted to all these purposes.

I have heard that the Knights of Malta had it long in contemplation to erect a Lazaretto on Salmonetta ; but I am unacquainted with the causes that hindered the completion of this design ; as, doubtless, so convenient a provision against the introduction of Plague, would be an invaluable resource to a country

which has so much commercial intercourse with the Levant.

The climate of Malta, though hot, is favored by many advantages. There are rarely any fogs or vapors, and, unless in the months of January, February, and March, the sky is one continued azure, with seldom a cloud to intercept the rays of the Sun. In regard to heat, I believe some part of the summer season comes little short of what is experienced in the West Indies, the thermometer ranging from about 75 to 85 in the shade. A late writer* has, I think, rather over-rated this matter, in stating "that the heat is *greater* during eight months, than in either the East or West Indies." This mistake may have proceeded from a deception of the sense, probably, from the oppressive languor caused by the sciroc wind, which, from its relaxing quality, imparts a sensation of being much warmer than the thermometer indicates.

Sudden transitions from heat to cold are felt in a remarkable degree when the wind shifts

* General Cockburn.

from a southern to a northern point; this, however, is not peculiar to Malta, but is experienced in most parts of the Mediterranean, near the coast of Africa. Should the wind change suddenly from a northern quarter to S. E., from which latter point the sciroc blows, it is frequently attended with a rise of not less than 20 degrees. When we consider the influence which so great a vicissitude is likely to exert over the human frame, especially if weakened by previous disease, or by any other cause, it seems almost incredible, that very hurtful effects do not generally ensue:— but this is never the case; and the most delicate habits will emerge from three or four days of sciroc, with as much impunity as if the temperature had been perfectly uniform and moderate. A change from sciroc wind imparts to most people a feeling of elasticity and exhilaration not unlike what is experienced after a cold bath in sultry weather. Yet these agreeable sensations do not depend always upon the transition from an atmosphere that is *actually more heated*, as the

thermometer often points out a higher degree of real heat afterwards, than during the prevalence of this wind: shewing that the effect upon the human body arises from something peculiar in the quality of the wind, and which, probably, will for ever elude detection. To assume, as some have believed, that the relaxing and depressing effects of the sciroc depend upon any impregnations acquired by it in passing over the barren, sandy, and burning continent of Africa, seems rather a plausible than a satisfactory account of the matter, since it is almost inconceivable, that any impregnations of this kind should not be dissipated or diluted during their passage over the intervening sea.

The seasons of one year do not differ materially from those of another; nor is there, perhaps, any part of the world where the temperature continues more equable. There is, in fact, but little variable weather, excepting about the early part of the spring, or the beginning of February, when the quantity of rain is often very considerable; and the

gales are so tempestuous, particularly from the N. E., as to turn small craft upside down in the harbours. This wind is called by the natives, " Gregalia," and is the same with the Euroclydon, which proved so disastrous to St. Paul. Snow and ice are seldom seen: when they do occur, their visit is a very transient one. There are, however, frequent and heavy falls of hail; and some of the grains so very large and angular, as to resemble broken fragments of ice. During hot summer weather, the night is the most oppressive part of the twenty-four hours, there being but few degrees of difference in their temperature: in consequence of this uniformity in the heat of the day and night, the dews are inconsiderable, excepting when the sciroc-wind prevails; but, even then, they are slight and evanescent. Thunder and lightning are not unfrequent occurrences; nor can anything be imagined more awfully magnificent than the sky, dressed in all its gloomy terrors, whilst the vivid flashes dart across the horizon in rapid succession.

The thunder-peal is truly terrific, and has often brought to my recollection the following passage, in which its effects are described with such majesty:—

> " Quo bruta tellus, et vaga flumina
> Quo Styx, et invisi horrida Tænari
> Sedes, Atlanteusque finis
> Concutitur————"

On these occasions the rain falls in torrents, but is soon over, and the sky resumes its natural serenity.

The quantity of corn grown in the Island is unequal to the consumption of more than one-third of the population; but, as large supplies are constantly imported from Barbary and some of the neighbouring coasts, Malta is enabled, out of its stores, not only to provide against the wants of its inhabitants, but to spare a great deal for exportation; and, upon several occasions, Sicily itself has had to apply to the granaries of the * Universita in times of scarcity. The people are, therefore, not

* The Universita is a body of magistrates, part of whose duty it is to provide corn and regulate its sale and prices.

often exposed to a visitation of the miseries attendant upon a dearth of wholesome provisions.

There are about twenty-four small towns, or *casals*, all of which are built of hewn stone, and the very meanest of the houses are commodious and healthful. In these respects, the villages of Malta are, perhaps, superior to those of any other country in Europe. There is, besides, a sprinkling of country houses and hamlets for the more convenient accommodation of those occupied in the culture of their farms and gardens.

The natives are healthy, active, strong, industrious, and sober; and so devoted to their country, as to think no other on the face of the earth can come into comparison with it. Hence they dignify it with the title of "Fiore del Mondo." Their diet is simple, consisting of vegetables, maccaroni, fruit, eggs, oil, cheese, honey, and a little animal food, (for the most part fish,) and they are very temperate in the use of wine and spirits.

It remains only to say a few words of the contiguous island of Gozo, which appellation, in the Maltese language, denoting "Joy," was imposed, no doubt, on account of the great fertility of the soil, and every other advantage conducive to health and comfort which it so eminently possesses. Gozo, though standing higher than Malta, has a leveller surface, and, in consequence, gives less trouble to the husbandman, and makes a better return to his labours. The soil is of the same quality as that of the neighbouring island, but deeper, and it enjoys the convenience of many abundant springs of fresh water. The dimensions of Malta do not exceed twenty miles in length, and twelve at its greatest breadth; nor is Gozo much above nine long and about five broad.

If the above be an accurate sketch of these Islands, it must be allowed that there is, at least, no *prima facie* evidence of their being liable to generate pestiferous miasmata. Whether we consider the narrowness of their extent, the superior description of the houses, the dryness and quality of the soil, or the habits of the people, it is, perhaps,

impossible to conceive any part of the world where the inhabitants can be less exposed to the morbific influence of local causes. But, as it will form the business of a future chapter to enter more minutely into the detail of this subject, I shall dismiss any farther notice of it, for the present.

I close this outline with a copy of verses, never before published, and written by a Maltese priest just before his decease. As they are descriptive of the island, the simple character of the people, and, more than any thing, an enthusiastic attachment to their country, it may not be an unacceptable morceau to some of my readers. In other respects, they have, I am aware, little to recommend their appearance before the public. Yet, humble as the author's pretensions certainly are, to any great share of the *afflatus divinus* of his great prototype, in pastoral composition, it is but fair to observe, that this little Poem was written under the pressure of sickness, and, therefore, at a season when the mind may be supposed but little fitted for the labour of revision.

DE INSULIS MELITÆ ET GAULI

Ecloga.

Fingitur in Publii casa esse tabulam topographicam Insularum Melitæ et Gauli, de qua Pastores sermonem instruunt.

DIODORUS et PUBLIUS.

DIODOR. Muro quænam fixa tenes incognita signa?
Urbano anne modo sylvestria tecta decoras?
Cur potius madidâ non pendet cantharus ansâ?
Cur potius Citharæ non pendet amabile pondus?
PUB. O Diodore tace—Patriæ non cernis in illis
Expressam formam, neque patria litora noscis?
Detulit hanc tabulam civis mihi nuper amicus.
DIODOR. Parce precor Publi, pecoris custodia semper
Me tenet, et patrios prohibet cognoscere fines.
Nunc equidem video sparsas per litora turres
Et geminas cerno disjunctas gurgite terras
Quas inter Scopulus mediis circumdatúr undis.
PUB. Est major Melite, quæ piscis tenditur instar
Portubus inlustris, multis habitata Colonis,
Et minor est Gaulos, scopulusque est ille Cominus.
Hic ubi prorumpit tellus, geminique creantur

Portus Valettæ, et reliquæ sunt cominùs Urbes
Quas cingit Cotonera altis tutissima muris.
En Portæ, en turres! en propugnacula belli!
En merces variæ, en tutâ statione carinæ!
DIODOR. At quid longinquo depictum est culmine montis!
PUB. Urbs ibi prisca jacet, nostrorum clara parentum
Sedes, usque adeo tantæ vestigia molis
Prostant marmorei lapides, fractæque columnæ:
Urbis splendorem tantis tu disce ruinis.
DIODOR. Est equidem! Melitæ media, atque in parte superbit:
Illic ire juvat, populo comitante quotannis
Cum Pauli festiva dies celebratur; ibique
Præmia sæpe tulit currendo mula Parentis.
PUB. Urbi quæ vicina sedet pulcherrima moles
Villa est Verdola annosis circumdata sylvis
Hanc juxta nuper Prœsul Durinus amænas
Aedes construxit, pingues ubi copia aquarum
Reddit agros; est hic Durinus scilicet ille
Nomine Crisauri Arcadicis sat notus in arvis.
Egregios istic fructus dat terra, thymoque
Roscida mella illic fiunt redolentia passim.
DIODOR. Hæc quæ circumstant, sunt oppida cognita nobis
Quæ circum effodimus nummos, idola, lucernas,
Telluris gremio prisci vestigia ritûs.
At quæ percurrunt Melitensia litora puppes
Ignitæ? Cur tot numero bellumque minantes?
PUB. Sunt hæ Turcarum, piget heu memorare phalangas
Tentârunt olim nostram qui vincere terram.
Restitit at virtus nostrorum mascula Patrum

Enituitque adeo, penitus quòd pelleret Hostes.
DIODOR. Non ignoro equidem, hæc proavus narrare solebat
Cum jam perfecto languerent membra labore
Et narrabat uti Turcæ per rura vagantes
Virginis excusam sanctæ rapuêre figuram
Ipsa sed ingemuit, Numenque vocavit amicum;
Audivêre sui clamores Virginis, atque
Unanimes, fusis Turcis, torrentis ad instar,
In templo statuam rursus posuere redemptam
Gaulum et tentârunt aliquando invadere Turcæ;
Tunc Siculus miles sese cum prole necavit
Effugiens hostis constanti morte ruinam;
" Tantum libertas potuit suadere malorum !"
PUB. Extremâ Melitæ stans hoc in parte sacellum
Virginis illius sacrum est; quam sæpe solemus
Vexati curis precibus votisque precari.
Non procul hinc Paulus disruptâ nave per æquor
Appulit, et nostros docuit sacra dogmata Patres;
Hinc Portus Pauli nomen retinebit in ævum.
DIODOR. Non me tanta latet, cunctis notissima fama:
Hinc pietas Melitensis, adhue florescere gentis
Visa est, neque ullo deletur tempore; fulget
Sat pietas nostrûm, si tot celeberrima templa
Passim conspicias, tangentes sidera moles.
PUB. Montibus en Gaulos Melitâ magis eminet; illic
Pastores superant nostros, Diodore, labores.
Brachia mille modis medias jactare per Undas
Cerne hic turriti nascentia mœnia castri
Quod generosus Eques Pinto sub principe condit
Quæ procul apparet contermina nubibus ora

Trinacriæ est Regnum, vicinaque terra Pachini;
Quæ propior picta est sterilem dixere Cocyram.
Quæ verum longe distant, ubi respicis austrum
Sunt Lybiæ syrtes, et Punica litora quondam
Inlustres urbes, sed nunc horrentia Regna.
Quàm longe pateat pelagus modo respice utrumque
In latus occidui Solis, solisque orientis;
Parvulus hic scopulus deserta est Fulfula sæpe
Quam nostra accedit captura Juventa Volucres.

DIODOR. Plura equidem vidi visu dignissima, nostra est
Tellus exigua, et terræ non invidet ulli,
Naturæ dotes si contempleris, et artes
Pervigiles hominum.

PUB. Hinc est dedita gloria nostrùm
Famaque nostra micat, terrâque marique per orbem.

DIODOR. At satis: ecce dies jamjam decrescit, in undas
Se sol submisit, non amplius umbra videtur.

PUB. At nox errantes suadet me ducere capras
Hos aliàs reliquos patriæ dicemus honores,
Ducemus choreas, voci et sociabimus artem.

CHAPTER II.

Of the chief Causes which have led to Errors on the Question of Contagion.

BEFORE entering on the proofs, by which it is proposed to demonstrate the contagious character of the Plague, it seems to me necessary to premise a few observations relative to the more frequent causes which have led to erroneous conclusions on the subject of contagion in general; as it is from the influence of these, that much discordance of opinion has originated; and, indeed, not only in reference to the present question, but on every other connected with pathological enquiry.

I have not considered the obviousness of the remarks I am about to offer, a sufficient reason for passing them over as superfluous, since the least reflection must convince us, that those truths, which cost the least effort to discern, are always the most liable to be

overlooked or undervalued; and this without any regard to their intrinsic importance.

The causes of error to which I refer, proceed either from

The instability of the condition of the living system;

The ascendency which opinions and prejudices obtain over the judgment;

Indolence in the investigation of facts;

Or, lastly, from too precipitate and incautious a use of facts.

I hope, by dwelling upon each of these sources of fallacy somewhat in detail, that the reader may be better prepared to exercise his judgment independently, as well as more circumspectly, on the question before us; secure, at least, from the deceptions of merely plausible reasoning, or ingenious misapplication.

Against those errors, which are liable to arise from the instability of the condition of the living system, it is to be feared, that no sagacity or caution can ever be expected wholly to provide. Fallacious as our deduc-

tions are so frequently discovered to be, when drawn from the operation of *inert* substances upon each other, the uncertainty of their truth becomes incalculably greater, when we would investigate the principles by which *living* matter is acted upon. Hence, even with the most wary caution, to suspend coming to any conclusion which is not borne out by just rules of philosophizing, the difficulties in the way of obtaining correct notions on the subject of contagion are peculiarly discouraging. If, as in Natural Philosophy, or Chemistry, we could depend upon having the phenomena presented to us at the different times of our examining them, precisely under the same circumstances, we should then have possession of a rich field of discovery. But, unfortunately, so many and such various accidents are liable to modify the state of the human body, as well as so many collateral influences, to obscure the agency of any morbific cause which acts upon it, that it seems hardly possible to disentangle the investigation, and to distinguish, with con-

fidence, between real and apparent results. It is this uncertainty which, principally, occasions the discordance of opinion we find among writers on pathology, and that from the earliest ages of Medicine, has continued the inexhaustible source of theories and systems, the most plausible of which have proved, at length, to be little more than ingenious speculations, and accordingly, are now exploded or forgotten.—From these considerations a sober lesson is derived, which, I need hardly observe, ought to produce in us a due distrust as to the stability of any theories we may ourselves be adventurous enough to build up.

As to the ascendency which opinions and prejudices obtain over the judgment, a frequent occasion of fallacy is an undue importance bestowed upon the writings of the ancients. Some are infatuated with so blind a respect for every thing antiquated, in point of authority, as to give only a reluctant credit to any opinions which are at variance with the infallible names of Hippocrates, Galen, or

some ancient father of the Art. A philosopher of this school realizes the observation of the satirist:

" ————et nisi quæ terris semota suisque
" Temporibus defuncta videt, fastidit et odit."

But, although it must be admitted, that the writings of antiquity contain much valuable information, and are often entitled to a high degree of our respect, from the internal evidence which many of them furnish of laborious and unsophisticated zeal in the cause of truth, yet, it is no less certain, that as much caution is necessary in adopting principles from these sources, as whilst exploring the volume of Nature itself. It is, perhaps, more remarkable of Medicine, than of any other tentative science, that, throughout all ages, up to the present day, even the most illustrious of its professors, have been much drawn away from the contemplation of particulars, to indulge in generalities, and abstract speculation; so that, in short, without a very watchful guard upon the understanding in the perusal of any writers, whe-

ther of earlier or later date, the Medical Philosopher will be in greater danger of confirming his mistakes, than enabled to discern truth more clearly by their assistance :— The business of the Physician, who would extract safe and useful principles from the records of the Art, is scrupulously to examine into the reasonings of his author, and to compare them with the facts upon which they are rested ; and, if he finds that their agreement is just, he will be warranted in assenting to the validity of such reasonings, provided his own observation be not at variance with, or do not cast a suspicion on the fidelity of the author's statements. But if these statements are likewise observed to coincide with his own individual experience, the enquirer may then, (and, perhaps, not until then,) safely congratulate himself upon a real accession to his knowledge.

But, whilst we are cautious to avoid being imposed upon by schools and systems, it is necessary to be not less careful in steering clear of the opposite extreme. Our reason,

whilst emancipating herself from the bondage of authority, is too prone to neglect every guide but the feeble light derived from individual observation; and thus, by setting at nought the information which others have collected and transmitted, we virtually renounce the utility of all experience, and deliver Medicine, at once, into the hands of an ignorant and degraded empiricism. It is unnecessary to dwell at any length in exposing an error of so very glaring a description; yet, there is reason to believe, that a disinclination to appreciate duly the labours of others, has long existed the occasion of much unproductive controversy on the subject of contagion.

It results, moreover, from this spirit of depreciation, that we sometimes discover in the works of Medical writers, a disposition to treat the opinions of those who dissent from themselves with a contemptuous levity, equally indecorous as it is inconsistent with the character of a learned and liberal profession. Still, if we could have any assurance that this conduct proceeded from the

workings of an honest and independent zeal, the motive might, in some degree, extenuate the extravagances to which it leads. There is, however, too much reason to suspect, that many of these authors are but little concerned about the advancement of knowledge, and that the real scope and tendency of their writings is aimed at the gratification of selfish feeling,—perhaps, the furtherance of some object of private interest. Another mistake sometimes discoverable in this class of reasoners, (if they can deserve to be called reasoners,) is the value which they set upon the number of plausible arguments that may be pressed upon one side of a question. And, yet, it is evident, that arguments, however numerous or plausible, can afford no solid support, unless they are founded on a broad and firm basis of facts. It is not a mere mass of circumstances collected together from whatever source, that ought to constitute evidence, but a series of *clear* and *well authenticated* particulars, converging and making in favour of a principle by which

alone, and no other, the bearings of the question can be most satisfactorily explained.

Of the sources of fallacy which have been just considered, viz. too devoted a respect for authority, or its opposite ; the former has, perhaps, most generally impeded the progress of medical science ; as it begets a passiveness, which totally unfits the mind to put forth its powers, or to examine sufficiently for itself the truth of the principles it adopts on the credit of others. To express the whole concisely in the words of a high authority : " Obest plerumque iis qui discere volunt auctoritas eorum qui se docere profitentur. Desinunt enim suum judicium adhibere ; id habent ratum quod ab eo quem probant, judicatum vident." This leads me to bestow a few remarks on the last source of mistaken opinion ; and which is nearly allied to the one we have been discussing ;—namely,

Indolence in the investigation of facts.

From indisposition to apply its powers in the pursuit of new facts, the mind is peculiarly liable, in a science of so conjectural

a character as Medicine, to be seduced by the attractions of theory. The field of experiment being extensive, and the fruits of its cultivation precarious, the labourers are too commonly disinclined to exertion, and, as the exercise of the imagination is a much more agreeable occupation to most people, than the dry details of experiment, the understanding is apt to deliver itself to opinions which are little else than the mere idols of its own creation. No class of philosophers are more unwilling to be convinced of their errors than these, pride being concerned to maintain what they have been accustomed to value as the product of their ingenuity, and which, if cherished any length of time, acquires, in their estimation, all the force of unquestionable truth.

If this be a just state of the matter, surely none can be more disqualified than such persons for advancing a science like Medicine, whose path leads through so many intricate mazes of uncertainty. The great Roman orator was well acquainted with this

disqualification in the philosophers of his own time; adverting to it, he emphatically asks, and the question may be put with much justice, in reference to many works of modern times on the subject of contagion—quid tam temerarium tamque indignum sapientis gravitate atque constantiâ quam *quod non satis explorate perceptum sit et cognitum* sine ulla dubitatione defendere.

Of the fourth and last cause of error, the instances are not less numerous than of any of the former; and it will be found, that a precipitate and incautious use of facts is a frequent occasion of dispute in the Medical World.

The obscurity which envelopes the operation of morbific agents upon the human body, gives a pre-eminent advantage to that man who possesses the greatest dexterity in wresting and accommodating what he observes to his favourite opinions. Hence have resulted the almost infinite modifications of theory on the causation of those diseases, by

some termed *epidemic*, and by others *contagious*, certain of which theories have exercised a more absolute dominion, according as they may have been constructed with greater or less ingenuity. Nay, by mere adroitness in misapplication, it not unfrequently happens, that the very *same* facts and circumstances are made subservient to establish systems the most directly opposed to each other; yet each is defended with so much earnestness, and delivered in a tone of such perfect confidence, that we might suppose their respective champions were contending for points as obvious as a mathematical demonstration. So ready is the foregoing abuse to entwine itself with our reasonings, that it has even extended to the mathematical branches. Of this we have notable examples in the theories of Tycho Brahe, and Copernicus, which, though so essentially differing from each other, continued, severally, to sway the assent of mankind for ages. Yet these theories rested upon the *same* apparent phenomena,

and all calculations are found indifferently agreeable to both, whether the earth be supposed to move in the ecliptic, or be only allowed a diurnal motion round its axis.

In short, if we would expect to attain to any thing like certainty in our investigations of morbid phenomena, our surest chance of success must depend on accompanying a laborious experimental research, with a close, patient, and circumspect exercise of the judgment; otherwise experience will prove but a delusive light, decoying us perpetually into mistakes, and cheating us of the fruits of our labour. We see, for example, in Chemistry, what palpable errors have arisen through neglect of these means, from the earliest cultivation of the science to the present time. Instances without number might be cited. To mention one of more general notoriety, the principle of levity or phlogiston, was, for nearly a century, embraced as a discovery in every part of Europe, and continued to maintain its ground unshaken, until Lavoisier, and others, by

more exact experiments, aided by a more severe and cautious contemplation of results, wholly disproved its existence.—Even in Geometry and Mechanics, branches of truth, the principles of which are immutable, there are not wanting many examples of men being carried away by a train of incautious reasoning, to assent to conclusions which all the world know to be fallacious, but which, however, were maintained by their authors with the utmost pertinacity. I need scarcely mention, as illustrations of this, the numerous infallible modes of finding out the quadrature of the circle, and the perpetual motion, which have, at different times, been vauntingly proclaimed to the world; with many other such discoveries, equally unreal and fanciful. If, then, whilst reasoning on true principles, we are not safe from sliding into great errors, *a fortori*, how greatly more are we exposed to deception in a science like Medicine, the principles of which are so indeterminate.

Discouraging as the prospect may appear

of our ever arriving at any very extensive or certain knowledge in the science of Pathology, we shall, at least, be safe under the conduct of a well regulated experience, from falling into either extremes of absolute scepticism, or dogmatical self-sufficiency ; extremes which, I need not add, are both equally inimical to the productive efforts of the understanding. If a more serious consideration were bestowed upon these things, plain as they may appear, we should, certainly, witness much less of that acrimony which so often disgraces the pages of Medical controversy. Indeed, were a Physician truly earnest in the cultivation of his Art, he must find his way every where so beset with difficulty, and see such frequent occasion to alter his course, or to retrace his steps, that the tone of his discussions, in place of provoking impatience, would always challenge respect and attention ; and, if they should fail to engage our assent, would, at least, make the best possible provision for an impartial consideration on the part of his readers. Whilst such a man com-

municates his opinion, whether they are tenable or otherwise, we plainly perceive throughout, that his most earnest aim is the attainment of truth.

It must be allowed, nevertheless, that there is no little difficulty in approaching certain controverted questions with a mind altogether free from preoccupation. Who, in fact, can assure himself, that he alone is exempt from prejudice in some shape, arising either from his passions, interest, temper, self-love, or some other silently operating motive? Besides, the domination of prejudices, we know, is much strengthened by the length of time they may have been entertained; and it would be unreasonable to expect, that opinions which have been long assented to as realities, should be surrendered without a struggle, even to weighty and conclusive arguments. Still there must be limits to this forbearance, particularly where we find, as too often happens, manifest indications of an illiberal and even an arrogant disposition, under the mask of zeal for the interests of

science, since such a frame of mind is diametrically opposite to the spirit of scientific enquiry. **Opinionatretè*, perhaps, furnishes the very best of all proofs, that the positions which it would defend, are, in reality, indefensible, and may fairly authorize a suspicion, that their author is striving against his conviction at the time he is maintaining them.

I would not have trespassed with the foregoing observations, all or most of which, I repeat, must be familiar to every one engaged in the pursuit of natural knowledge, but that so many instances of daily occurrence shew they are too seldom kept in view; and, perhaps, on no other subject, have the above causes of error ever prevailed to a greater extent

* I cannot help lamenting, that this spirit, which a certain author terms a "sturdy unyielding pertinacity," should ever be found to shew itself in the consultations of Physicians. The egotistical and vulgar obtrusion of our own sentiments, however just they may happen to be, not only degrades a liberal profession, but essentially impedes the full and free exercise of the judgment, by the prejudice it enlists on one side, and the disgust it must excite on the other.

than on the question of pestilential contagion. Thus we have presented to us almost as many opinions as there are writers on this subject; and, I need not add, how obstinately many of those opinions have been maintained, on what slender grounds some of them have been taken up—what hostility they have produced, and, by consequence, what discredit this warfare has brought alike upon the Professors and the Profession of Medicine. It is, no doubt, a disheartening consideration, that so much intellectual labour has been expended to so little purpose; yet, I persuade myself, the failures have arisen more frequently from the disposition in which men have set about the enquiry, than from any actual inadequacy in the capabilities of the human understanding; in short, that our knowledge would be more successfully advanced, if, as Locke observes, "men would seriously, and with freedom of mind, apply all that industry and labour of thought, in improving the means of discovering truth, which they do

for the coloring and support of a system, interest, or party they are engaged in."

To conclude: I cannot be ignorant, that, throughout the whole of these remarks, I have been providing a code of severe laws and penalties against myself, and which, most probably, may be pointed with effect against numerous deficiencies in the present Volume. Should this prove to be the case, there still is a consolation arising out of the consciousness that I have not neglected to avail myself of every opportunity, (and, I may add, the opportunities which did occur to me were of a very peculiar kind), which my experience has afforded, to arrive at some well authenticated facts on a question of great public importance. Neither have I been wanting in an endeavour to use the results of this experience in a manner which seemed to me best suited to the acquirement of some useful knowledge.

CHAPTER III.

SEC. I.

Facts, in proof of the * contagious nature of the Plague.

I PROPOSE, in this Chapter, to comprise the arguments and facts collected during my services in Malta, in support of the conta-

* As it is indispensable, in the conduct of every discussion, that the exact meaning of the words upon which it principally hinges, should be clearly defined and settled, I think it right in this place to make a few remarks on the import of the terms *infection* and *contagion*.

Infection is a word of figurative construction, derived from *inficio* to stain, imbue, or contaminate, denoting the power or quality of a morbific agent, to contaminate with disease; whether this contamination take place by the air, or by contact immediately or mediately with a diseased subject. In the latter of these meanings, it signifies what both ancients and moderns agree to understand by contagion, which, therefore, according to the language of Logicians, differs from infection only in being a term of lesser extension. The etymology of infection, as here stated, receives farther

gious property of the Plague, under the following divisions:

I. The extension of the disease to Valetta from the infected vessel, San Nicolo.

II. Its extension to the individuals who were

confirmation from the circumstance, that Βαφή, which is synonymous, comes from a similar root, Βαπτω *inficio.*

Thus, contagion expresses only a *mode* of infection, in proof of which we have different passages, both in Greek and Roman writers. To take an example from each. Tacitus expresses the whole matter clearly, in the words—*infecti quasi valetudine et contactu.* And the meaning of Aretæus is not less decided to the same effect, when speaking of elephantiasis, he observes, Δέος δε ξυμβιῶν τε, καὶ συνδιαιτᾶσθαι, ἠ μεῖον ἠ λοιμῶ, ἀναπνοῆς γὰρ ἐς μετάδοσιν ῥηϊδίη Βαφη.

In saying thus much, my object has been to settle the signification of these words, by comparing them with their *original* acceptation—a standard that ought never to be lost sight of in the application of such terms, so long as the same terms are technically retained: otherwise there would be no end to the confusion introduced by the right which every author might claim of defining them according to his own individual conceptions: of this we have fresh instances every day, there being hardly two authors who use these terms in precisely the same sense.

infected by communicating with the first case in Valetta,—and to the Augustin Convent.

III. And its extension to certain of the Casals,—and to the island of Gozo.

The evidence will, in each of these instances of comunication, be made out by *direct* proofs, excepting in the first, which, for want of facts derived from satisfactory authority, to establish fully an * actual communication between the San Nicolo and the City, I design to prove by a different method; but I believe this item of the evidence will be borne out by circumstances as convincing as any which have yet been brought forward, either *directly* or *indirectly*, to determine the contagious quality of the disorder.

The considerations towhich I attach particular importance, as pointing out the San Nicolo, the *fons et origo malorum*, are to be

* The manner in which the Plague was introduced into Valetta from this vessel, was confidently stated in Malta to have been by a piece of linen, part of her cargo, which was purchased by one Salvatore Borg, a shoemaker, whose family was the first infected.

found in an official letter, which I had the honour of addressing to the Commander of the Forces a few days after the arrival of this vessel in Malta *, and of which I here present a copy.

VALETTA, APRIL 10, 1813.

SIR,

Although in offering the following observations relative to the means of preserving this Garrison from the calamitous distemper with which it is threatened, I should not be altogether able to elude a charge of intrusion upon the province of the Health Officer, yet, as the only Physician to His Majesty's Forces on this station, I trust your Excellency may be pleased to see that the contribution of my opinion at such a juncture, (though it has

* It may be satisfactory to the reader to be informed of the following particulars relating to the arrival of the San Nicolo:

Two Turkey merchants shipped on board this vessel, at the Port of Alexandria, a cargo of linen, flax, and leather,

not been called for,) is not unjustifiably at variance with my duty. It was my intention to have had the honor of addressing your Excellency on this subject some time ago, and previous to the malady being reported so close in our vicinity. The melancholy fate of * the surrounding countries which have lately fallen a prey to its ravages, left in my

with some other articles. Part of the crew having died of the Plague on their voyage to Malta, the vessel applied to the Health Department of the Island on her arrival (the 28th March) for admittance into Port, previously using the precaution to notify her state, by hoisting a yellow flag with a black ball in the centre, this being the signal to indicate the actual existence of Plague on board. Her application being acceded to, she was accordingly received into quarantine in the Marsamuchet Harbour, within about a cable's length of several points of land and of the city of Valetta. The surviving part of the crew were taken into the Lazaretto, situated in a small island in the middle of the harbour. The captain of the San Nicolo and his servant sickened in a day or two after their being received into the Lazaretto, and died with indisputable symptoms of the Plague.

* At this time, and for a year previous, the Plague was raging with violence in differents parts of the Levant.

mind no doubt as to the expediency of such a proceeding. My purpose was, however, for the present overruled by certain of my friends, who could not be brought to believe, that the evil was in the least likely to approach so near to ourselves. If credit can be placed in the report of the day, these expectations have proved delusive, and, therefore, I can no longer apprehend that my addressing your Excellency on this subject should be deemed improper. I shall, consequently, hasten to submit for your consideration a proposal, from which, obvious as it certainly is, I am led to think considerable advantage might **still* be derived for the protection of Malta against the introduction of Plague. With this view I would suggest, that neither the harbour of Marsamuchet, nor the Island there, usually allotted to quarantine should, upon the present emergency, be

* The word *still* is used here in consequence of my having understood, at the time of writing this letter, that an application to destroy the infected vessel then lying in Marsamuchet Harbour, was resisted.

accessible to any arrivals from suspected Ports; and, therefore, that some more distant, yet commodious place, be sought out, which, after being insulated from all intercourse with the inhabitants, should exclusively be destined for the reception of all vessels with any * suspicion of the disease.

Some information which I have lately received, will not allow me to doubt, Sir, that † such a place may be found, and that the vessels, cargoes, and crews of infected ships could be disposed of in such a secure manner as to allow of the least possible risk. Unless called upon, I will not trouble your Excel-

* From the arrival of the San Nicolo, until she was sent away nearly a fortnight afterwards, vessels continued to be received into this harbour from the infected Port of Alexandria, some of which had the Plague on board; and, among others, a Gibraltar Xebec privateer, and two transports, the Monarch, and Intrepid.

Vide Giornale di Malta.

† Vide p. 8, for Briarley's and Lawson's Reports of St. Paul's Bay, the harbour here alluded to.

lency with any detail of particulars by which my proposal might be carried into effect.

Whether the apprehensions now prevalent about the existence of Plague in our vicinity be sufficiently founded or otherwise, I cannot resist conviction, that the measure I have been proposing would, in time of *such peril*, have been at *the first*, (that is, when the San Nicolo applied for admittance,) of much importance. Assuming that there exists no longer any reason to doubt, that the disease has actually made its appearance in the neighbouring quarantine ground, *the dangers arising from the extreme proximity of that situation to so very populous a neighbourhood as this, are, in my humble judgment, too obvious to require comment, since the points of invasion, by so formidable an enemy, are thereby so fearfully multiplied. How awfully has the experience of other times informed us, that in this and in similar situations of exposure, the Plague finds its way in defiance of the most vigilant regulations!*

It is this reflection which has chiefly prevailed with me to submit the above proposition to your Excellency, by the *prompt adoption* of which it appears to me the best *chance* would be afforded of checking the approaches of a calamity *which, even a little delay, might baffle the best efforts to oppose.*

I hope, Sir, the urgency of the occasion will atone for any imperfections in this letter, attendant upon haste and anxiety, and that you will believe me, with the most zealous concern for the interests of His Majesty's Army, and the people here committed to your Government,

Your Excellency's, &c.

Arthur Brooke Faulkner.

Physician to
His Majesty's Forces.

To Lieut.-General Oakes,
Commander of the Forces,
&c. &c. &c.

Can any one who gives a cool and impartial consideration to the contents of this letter, and bears in mind, at the same time, that the Plague had not visited the people of Malta for upwards of one hundred and thirty-seven years, hesitate a moment to conclude that the presence of the San Nicolo, and the Plague, which manifested itself in Valetta in four or five days after this warning, do not stand to each other in the relation of cause and effect? This, I confess, appears to me, as a learned authority* observes, one of those "consecutions which are so intimately and evidently connexed to, or found in, the premises, that the conclusion is attained, *quasi per saltum*, and without any thing of ratiocinative process, even as the eye sees its object immediately and without any previous discourse †."

* Hale on the Origin of Mankind.

† The inference I have here drawn from the above letter is, indeed, so intuitively obvious, that I am apt to doubt, whether any attempt to render it more so, would not, as in the case of axiomatical truth, rather tend to tarnish its clear-

To allege, in the face of the above letter, that the breaking out of the Plague in Malta, on the arrival of the infected vessel, was a fortuitous coincidence, and no otherwise

ness. If,therefore, the following remarks,which are merely designed to place the circumstances of the case in a more familiar point of view, and to meet some of the most plausible objections which have been taken against it, should be deemed supererogatory by the majority of readers, I shall hope that my motives for obtruding them, will atone for the trespass, and that these observations will not be considered as arising from any idea in my own mind, that the subject stands the least in need of support beyond the contemplation of the facts of the case itself. To take a parallel instance with the one under consideration, let it be supposed that a person is chargeable with having intimated that a murder would be committed in his neighbourhood within a very short time, although no such event had happened there for nearly a century and a half, and that, in exact agreement with this intimation, the murder was actually perpetrated in the course of three or four days, would not every credit be due to this person for the particularity of his knowledge respecting the agent of the crime? At least, would not any Court of Justice be warranted in regarding the evidence as abundantly sufficient to justify his apprehension, in order to obtain an account of the circumstances which brought him acquainted with the fact; and, in the event of his refusing to give such information, can it be doubted that his life or his liberty would not be in danger from the operation of

connected with the presence of that vessel, appears to me, I own, hardly less rational, than, were the same reasoning employed to maintain, that an explosion taking place at

the laws? If this be a just way of putting the case, the same kind of evidence must be equally deserving of credit, as applied to my warning, relative to the impending sufferings of Malta, and becomes not less conclusive in establishing the correctness of my knowledge of the agent which was to inflict them. In both cases, the accomplishment following in exact conformity with the prediction, infers equally an acquaintance with the cause concerned in producing it.

The same general principle which would have warranted me in anticipating the diffusion of the Small-Pox, or any other contagious disease, under the same circumstances as the Plague on board the San Nicolo, as fully justified the warning contained in my letter to the Commander of the Forces; namely, the obvious connexion which the universal experience of mankind has established between certain natural phenomena as they occur in the regular and immutable relation of antecedents and consequents. It is needless to add, that it is upon this connexion the whole skill and success of every natural and empyrical science depends, and, that the Physician is enabled, not only to form his opinion as to what effects will follow from the presence of certain morbific agents, but by exploring effects with no less certainty to infer the agent or cause from which they are derived, although he may for ever be unable to give any satisfactory account

the time of applying fire to gunpowder, was not the proper consequence of its application thereto, but a mere contingency happening at the moment of the contact. The only difference in the two cases is this, that, in respect to the fire, the effect is more constant and immediate, than in reference to the Plague-Ship, but, in either case, as the event could be predicted by our experience, it is entitled to be looked upon as equally and indissolubly connected with its peculiar cause. The want of *constancy* in the succession of causes and effects, although it be the source

of the bond of connexion subsisting between these phenomena and their respective signs or indications. It is thus, also, that men are enabled to anticipate the most common events of life,

Hinc tempestates dubio prædiscere coelo
Possumus: hinc messisque diem, tempusque serendi.
* * * * * *
Atque hæc ut *certis* possimus, discere *signis*,
Æstusque, pluviasque, et agentes frigora ventos;
Ipse Pater statuit, quid menstrua Luna moneret,
Quo *signo* caderent Austri, quod sæpe videntes
Agricolæ, propius stabulis armenta tenerent.

of much scepticism, and has led many to deny their connexion altogether, is, in reality, no argument to justify such negation. For, let us recollect, that even those causes which are deemed the most constant in nature, may, at certain times, fail of being followed by their effects; and, as fire itself will not exert its action upon a combustible substance, unless under circumstances favourable to its agency, so neither will the contagious poison of Plague infect a person exposed to it, unless he be in a condition to be influenced by its power. In a word, both fire and contagion are equally proved, by our experience, to be specific and immutable causes, but only differing in degree as to the circumstances which render each of them operative *. The

* Aristotle remarks upon the same indissoluble connexion subsisting between natural agents and their effects, whether these effects proceed *of necessity*, or in the *usual way of their occurrence*. "A thing," says he, "is originated by Nature, (or, in other words, is produced by a natural cause,) when it contains within it the principle of its production, which must also observe a certain order. It matters not, whether the

same remark will hold good throughout the whole realm of Nature; and there, is, perhaps, not a single cause in the chain of her operations that is not subject to the same variation, in reference to the constancy of the effect. But as this matter will be pursued in a more proper place, I will pass it over at present without further consideration.

The unexpected termination of the first case that occurred in Valetta, and which, as will be seen by the description hereafter given, was marked by decidedly pestilential symptoms;—the rapid and successive attacks and deaths of those only who had immediate intercourse with this case, and who had all similar symptoms, and such, moreover, as characterized the disease imported in the San Nicolo—the immunity of the Island from a disease so distinguished for a hundred and thirty-seven years—the almost univer-

occurrence of the thing be of necessity or in compliance with what has been usual, *since it can only happen in one way, let that way be what it will.*" φύσει δε ὅσων ἥτε αἰτία εν αυτοῖς και τεταγμένη· ἢ γὰρ ἀει ἢ ὡς ἐπιπολὺ ὡσαὺτως ἀποβαίνει.

sally-acknowledged fact, that no other cause can produce the Plague but the presence of the diseased subject, or some substance imbued with pestilential poison,—when all these considerations are coupled with the actual presence and exposed situation of the San Nicolo, and viewed in connexion with each other, the proof is rendered, in my judgment, as complete as the question can require, that this vessel was the immediate cause of the contamination of the Island, whether we should ever be enabled to trace the mischief to a communication with the vessel, or otherwise: and the evidence acquires additional support from a circumstance, which was universally acknowledged at the time the Plague made its appearance, namely, that there existed no grounds, either demonstrable, probable, or even plausible, with regard to the climate, or circumstances of the Island, *in any one respect*, that could account for a deviation from the usually favourable state of the public health. Thus, whether we reason from the effect to the cause, or *vicè versâ*, we find the San Nicolo and the Plague of Malta connected as

signs of one another, and this is all the knowledge we shall, probably, ever arrive at on the subject of causation. It is, however, abundantly sufficient for every purpose of regulating our practice, such physical connexion constituting the whole amount of what we denominate *experience*.——But I will desist from any attempt to elucidate this matter farther, believing that it has little required the time here bestowed upon it for this purpose.—I cannot help again observing that nothing but a wish to meet every probable objection on the point in consideration, (and, I may add, that even the striking evidence of the facts has not been sufficient to prevent such objections from being urged), could have compelled me to make so great, and, it appears to me, so unnecessary a demand on the patience of my reader. If these reasonings should have failed to make the thing clearer, and I do not require to be convinced that the contrary may be the case, it only supplies a new instance to shew that no propositions are so difficult to prove as those which are nearly self-evident.

That there were serious reasons for the panic occasioned by the admittance of the Plague-ship, besides the insidious and malignant character of the disease itself, will, probably, not be denied, when it is known, that the guardians employed to watch over the vessel were taken from the very lowest of the community, and paid for their labour only about one shilling and sixpence or two shillings per day—a pittance which, in Malta, was hardly equal to a bare existence. The risk arising from the employment of these persons, on an occasion of such peculiar and imminent peril, will further appear when we come to make some remarks on the quarantine and police system.

After all the foregoing particulars are duly considered, it surely will not seem surprising, that the inhabitants of Valetta should have been seriously alarmed for their safety; and, in melancholy conformity with their worst apprehensions, the Plague broke out nearly in the heart of the city, within a few days after the arrival of the vessel.

The first person attacked was the daughter of Salvatore Borg, the shoemaker, of whom mention has already been made, and who resided near the centre of* strada St. Paulo, one of the principal streets of Valetta.

☞ *Since the foregoing matter was prepared for the press, I find, on perusing a very able letter published last year by Dr. Granville, that the account of the introduction of the contagion into Valetta from the San Nicolo, by a piece of linen, has received a full confirmation under the authority of Sir Thomas Maitland's dispatches, and other official papers. If any farther circumstances besides what have been stated could be required to establish the pestiferous communication between the San Nicolo and Valetta, this so well authenticated a fact must render the evidence altogether conclusive.*—See Dr. Granville's letter to the Right Hon. F. Robinson, M. P. &c. &c. p. 91.

* See the map of Valetta, letter E.

SEC. II.

I now proceed to shew how the Plague extended through the different members of Borg's family, and from thence to such individuals as had communication with this family, in the chain of their successive attacks.

In a circular and official letter, issued on the 4th of May, 1813, it is stated, that on the 16th of the preceding month, a girl, one of Salvatore Borg's children, (the person above mentioned, as the first attacked in Valetta,) is taken ill with symptoms of fever. She was visited by a Maltese physician on the 19th, who found her in a dying state, from what he considered to be typhus. The child died on the same evening. During the visit, he observed on her chest, below

the mammæ two tumors *, which resembled carbuncles; but knowing the parents to be extremely subject to cutaneous diseases, he paid no more attention to them. The mother of this child, in the seventh month of her pregnancy, was taken ill on the 1st of May with an attack of fever, and complaining of a tumor in the groin, which gave her uneasiness. The physician examined the part, and found the upper glands of one groin enlarged, although not much inflamed. On the 3d, the woman miscarried and the infant soon afterwards perished. In the course of the day, she complained of pain

* According to the report published in the Government Journal of Malta, the circumference of these tumors was not inflamed. They had a flat crust of a rosy colour on the top, *la loro Sommita era velata da un escara piana e di-colore rossiccio.* How, with so many collateral circumtances to justify the strongest suspicion, any Physician could have hesitated to pronounce a case so characterized as this to be Plague, seems unaccountable; and yet, we shall presently see, that the Maltese Faculty did not issue their decided opinion to the Public on the real character of the disorder, until much irretrievable time was lost.

in the other groin, but lower down than on the opposite side, which was also examined, and found in an incipient state of inflammation. She died during the night without delirium, or any expectation on the part of the Physician that the event would be fatal.

On the 4th her husband, Salvatore Borg, was attacked with fever, having, at the same time, an enlargement of the glands of the axillæ, and likewise in the groin: This man continued to linger until the 12th of the month, when he died with unequivocal symptoms of Plague.

Maria Agius, a school mistress, who was a frequent visitor in Borg's family, and who assisted his wife during her accouchment, was next assailed. This woman died on the 6th. After her decease, the body was conveyed to the Maltese Hospital for examination; and it was ascertained, beyond any doubt, that she was taken off by the Plague, exhibiting, among other unquestionable marks of the disease, a large tumor in one of the axillæ.

On the 8th Grazia Pisani was removed to the Lazaretto, affected with febrile symptoms. On the 15th a bubo made its appearance: on the 16th it burst, and she became convalescent. This girl used to live on terms of the closest intimacy with Maria Agius, and was in the frequent custom of passing the night at her house until after Agius became infected.

On the 8th, Salvatore Borg's father is seized with symptoms of a suspicious kind, and died the day following.

On the 14th, another child of Salvatore Borg's, about two years old, is taken ill, affected with fever, accompanied with a carbuncle near the os sacrum. On the 15th a bubo appears in his right groin. After having given some promising signs of recovery, the child at length perished.

On the 17th, Arcangelo Delicata, after a residence of eleven days in observation, on account of communicating with Maria Agius, was seized with equally well marked symptoms, having a carbuncle near

the os sacrum, of a gangrenous aspect, and being, at the same time, affected with fever, pain of the head, and vomiting. He died the same day. This man was a near relative of Agius, and was accustomed to visit her constantly, both before and after her attack. Here, then, we have traced the propagation of the disease from the first case in Valetta, in *eight distinct and well authenticated instances*, and all of them in the continuous line of communication with each other. The last six cases are given on the authority of Medical reports, published under the sanction of the Government of Malta.

About this time the contagion began to diverge in so many directions, in consequence of the unrestrained intercourse of the people, that it would have been extremely difficult, if not impracticable, to follow up the direct line of contaminations, even if the investigation had been earnestly pursued, which I have reason to believe was not the fact. Indeed, unless possessed of a more than ordinary share of ardor in the cause, it

was little likely that any one should set about the undertaking with the necessary perseverance, at a moment when so great terror and dismay paralysed the public mind. Besides there were but a few individuals who could command all the requisite facilities for conducting such an investigation with any good hope of success ; and those persons being public functionaries, were in general so unremittingly occupied in other duties, as to have, probably, as little time as inclination for entering upon a task of such peculiar danger and difficulty.

In the above cited instances, the contagion has been traced in a direct line a month and twenty days subsequent to the first entrance of the San Nicolo, and above a month after Borg's first infected child was taken ill in Valetta ; added to which, it is proved by official statements, that up to this period, there were no other individuals, excepting those already detailed, infected in any part of Malta. The document in support of this, to which I immediately allude, is contained in

an official report of the 15th of May, and runs in the following terms:—"*Il rapporto medico civile, militare, e di marina, fatto in questo giornale, e stato favorevole per non essere accaduto alcun caso in tutta la popolazione, chì merìta essere rimarcato.*" Let us pause on these details, and I think they will bring home conviction not to be resisted by any unprejudiced mind, that no other cause than contagion can possibly explain why the Plague should have been for so great a length of time confined to so few individuals, and to those individuals exclusively who had immediate communication with each other.

I next pursue the progress of the disease into the Augustin Convent.

The promiscuous intercourse which was kept up, especially among the lower order of people, for so many weeks after the Plague was introduced into Valetta, renders the task of tracing it into private or public buildings almost impracticable; and, to add to the difficulty, it will be easily believed, that their infected inhabitants, either from

a dread of the Lazaretto, (that bourne from which so few returned,) or from an apprehension of punishment, should their illness have been the consequence of any wilful violation of the police laws, or public orders, would be little disposed to make voluntary confession of their state, or of the source from which the infection was received. With regard to the Augustin Convent, the matter was otherwise; and the cause of its contamination is proved by circumstances, and supported by authority, alike decisive and unquestionable. This convent, situated in a peculiarly healthful, spacious, and airy part of Valetta, had, from the very beginning, observed the greatest caution to shun communication with the public. It was at length, however, infected in consequence of one of the servants, who was caterer by occupation, having, in disobedience of public orders, gone into a very contaminated part of the town, called the Manderaggio, and purchased infected clothes. Shortly after his return he made full confession of the circumstance, when

one of the brotherhood belonging to this convent, out of compassion, immediately volunteered to attend him, placing himself, at the same time, in strict quarantine with the patient. Both nurse and patient immediately fell victims to the disease, but *no other individual under the same roof was ever assailed.* These things are altogether notorious, and were circumstantially related to me by a priest of the monastery, one of the most respectable inhabitants of Valetta, who rendered great service to our Government by his activity and vigilance as a superintendent of the district in which he was employed to watch over the state of the public health. Judging from the advantages in so many respects enjoyed by the Augustin Convent in point of situation, standing not far from the top of one of the main streets, and much above the level of the sea, and the greater part of the city; the cleanliness and openness of the neighbourhood; the spaciousness of the interior accommodations, and the respectability and good order of its

inmates, it was, perhaps, the very last place where ingenuity could discover a pretext to explain the production of the disease through the agency of any other than a contagious cause. The escape of every other person within its precincts, excepting the servant and his attendant, with both of whom care had been taken that every possible communication should be cut off from the moment the matter transpired, puts the thing, in my opinion, beyond any reasonable doubt.

It may be asked, is it not probable that the servant would have infected some other person under the same roof with him before the disease fully manifested itself; to which I answer, it was *possible*, but by no means *necessary*. Many circumstances may be imagined to account for the immunity of the rest of the inhabitants of the convent; for example, this may have been one of those cases, where but a very short space of time elapsed from the pestiferous contact, and that, in consequence, the disease had not yet arrived at that stage when it acquires

the power of communicating infection in any considerable degree. It may also have happened, that until the servant found himself indisposed, he had had in reality no communication by contact with any one in the convent, or, being conscious of having purchased infected articles, he may have become, of his own accord, cautious of holding any intercourse with those around him, before he made confession of the deed, and put them on their guard. But, however the thing is to be accounted for, there certainly is no absolute reason to conclude that the rest of the society must have been contaminated as a matter of necessity. This subject will be considered more fully, when I come to speak of the various degrees of susceptibility possessed by different individuals exposed to contagion, and of the many concurring circumstanes which may be necessary to render contact actually effective in producing the disease.

In farther proof of the protection conferred

by seclusion, an historian * of the former Plague, which visited Malta in 1675, observes that all public buildings which cautiously shunned intercourse with the community, enjoyed a perfect exemption from the contagion, among which were the prisons, monasteries, and the cavalieri, or inn, occupied by the Knights of the Order, besides all the vessels in the harbour. And in the late Plague, the Hospital of Saint John of Jerusalem, the prison, and several public offices and private houses, which early adopted, and steadily kept up, a rigid system of insulation, were not less fortunate.

SEC. III.

The introduction of the Plague into the casals, or inland towns and villages, could be traced in a direct line, not less satisfac-

* Cavallino.

torily than in the instances already recited, to certain individuals, who were either infected themselves, or who had held some kind of intercourse with persons labouring under the disease.

The authenticity of this part of the evidence is guaranteed by written documents, which were put into my hands by one of the Captains of the Port of Malta, a very old and intelligent officer of the Health Department, the nature of whose services afforded him peculiar facilities of procuring information on the subject of pestilential contagion, and whose duties during the Plague, furnished him with ample opportunities of making the nccessary enquiries relating to the mode and circumstances of its diffusion, especially through that part of the Island which was placed more immediately under his superintendence. It is this officer's opinion, that wherever the Plague makes its appearance, and proper measures are strictly enforced, *sur le champ*, its progress may be completely arrested, not only within the limits

of the infected families, but may be prevented from extending even beyond the *individual attacked in the very first instance*, provided he be instantly removed out of the reach of communicating with others, and that the susceptible articles with which he has been in contact, undergo a thorough expurgation. The truth of this has been repeatedly exemplified during the late sufferings of Malta, the disease being arrested at once in several of the casals, in the houses originally contaminated, by the immediate adoption of rigorous and prompt measures of separation and seclusion, under the direction of the magistrates. In other casals, where these measures were either delayed, or were not so decidedly acted upon, the Plague spread to an alarming extent.

As the officer to whom I have alluded gives a very circumstantial account of the *manner* in which several of the casals had the disease brought into them in the direct line of contact, I think I cannot do better than to follow him throughout his detail from the

beginning, making only a few corrections in the phraselogy, as he was not very conversant with our language. There is also some irrelevant matter, for which the author is not strictly responsible, as I am satisfied the document was never expressly designed for publication. I will, however, take as few liberties with the manuscript as is necessary to avoid being obscure.

" Facts and repeated experience," says this officer, " clearly shew, that whenever the Plague makes its appearanee, and prompt measures of precaution are taken, instead of public functionaries fighting for dominion, losing days, weeks, and months, in mere discussions and intrigues, sacrificing innocent lives, and disgusting those whose intentions are really good, it may not only be arrested in the house originally contaminated, but will even *sink in the first case, though occurring in the midst of a family*, provided the remaining individuals are removed out of the house, and that they depurate themselves and their effects.

"The first case of Plague occurred in Valetta. The subject of it was the daughter of one Salvatore Borg, who fell sick on the * 14th of April, 1813; but the character of the complaint not be suspected, there was no meeting of Medical Authorities to ascertain it until the 4th of May. Thus, notwithstanding that twenty-two days had elapsed, during which time all Borg's family were in habits of free communication with the inhabitants of Valetta, no contamination could elsewhere be traced; and had the necessary precautions been listened to and adopted, the malady would not have proceeded beyond those who were already assailed. Indeed, the progress of the disease, even until June, was so slow, that in twenty or thirty days, by the retreat of the inhabitants to their houses, and by affording assistance to the poor, it might have been exterminated without

* Although this date varies from the official report which I have copied above, by a reference to the Government Journal of Malta, it appears quite correct.

farther trouble. From what has been stated, and from the facts which will come presently to be mentioned, any one must be convinced that the Plague is not a disease of that dreadfully rapid progress, and destructive nature that is generally supposed. The communication between the country and Valetta being freely open, several casals, in consequence, became contaminated. But after a proper plan of precautions was recommended to the *lugotenenti*, or magistrates, the contagion received an immediate check, and from casal Bircarcara to casal Mosta, including not less than twenty thousand souls, this plan of precaution was followed by the happiest effect, with the single exception of Bircarcara, where the spirit of party triumphed over all considerations of the public safety.

"Casal Lia, from about the 5th to the 12th of June, was placed in the most alarming situation, in consequence of having the Plague communicated to it by two different introductions. The first took place through the medium of a family of the name of Per-

cius, consisting of eight individuals, who, leaving their habitation in Strada Pozzi, a much infected street in Valetta, took up their residence in this casal.

" The second case occurred in the family of one Taria, consisting of six perons, and was occasioned by a boy who came home infected with the disease, which he caught whilst employed in the corn magazines at Floriana. Three individuals of the former eight, and two of the second six, perished. One of the former, and two of the second, recovered.

" The resumé of this casal is as follows :

Inhabitants of the casal....	1800
Introductions of Plague....	2
Houses infected	2
Inhabitants of these houses	14
Died	5
Cured	3
Propagation	0

" Casal Atard had likewise two distinct and separate attacks of Plague, from the 22d of May until the 3d of July. The first was

occasioned by one Paola Borg, who conducted her daughter from Valetta into this casal, whilst labouring under the disease. The second introduction took place through one Lorenzo Fenech, who was infected by communicating with persons in the neighbourhood of Casal Zebbug.

"The resumé of casal Atard is as follows:

Inhabitants of the casal....	1000
Introductions of Plague....	2
Houses infected	2
Inhabitants of these houses	7
Died	2
Propagation	0

"Casals Mosta and Nasciar deserve no less credit for their promptness in stopping the contagion, having had the disease brought into each of them five several times, and as many times suppressed.

"In Casal Mosta the first case took place in the month of June, the disease being introduced by a farmer of the name of Paolo Sant, who possessed a field near St. Paul's Bay, where he had been for some time

resident, though his proper dwelling was in the casal. This man was accustomed to gain a livelihood by carrying the produce of this little farm for sale into Valetta, where, it is probable, he received the infection. As soon as he became indisposed, he was immediately conducted by his wife and one of his sons to his house in Casal Mosta.

"The second attack occurred in the month of July, and was occasioned by a person attempting to rob the house of a beccamorto, or grave digger, who had died of the Plague. When this man first discovered his illness, he was living with his family, consisting of four individuals.

"The third and fourth cases fell out in August and September in the families of two persons of the name of Magro and Demarco, ten in number; but the cause of their contamination remains unknown.

"The fifth introduction happened, likewise, in the month of September, and was owing to one Grazia Zammit, wife to a beccamorto, employed at a casal, called

Rabato, having gone thither to see her husband, whilst he was engaged in his perilous duties. At the time of her being taken ill, she was occupying her father's house, with six other persons. It is satisfactory to know, that during these five introductions of the Plague into Casal Mosta, the deaths amounted only to one and twenty, including four beccamorti and two guardians, out of a population of nearly four thousand; and that the contagion, without being propagated farther, was stayed in the houses originally infected.

"Caterina Manueli was the person who first imported the disease into Casal Nasciar. This occurrence took place early in June and, was occasioned by her bringing home some clothes to be washed belonging to her son, one of the forzati, or convicts employed in Valetta to carry the sick and the dead out of infected houses. The family of Manueli comprised in all five individuals.

"This casal was infected in the second instance by one Joseph Frendo, a labourer employed at Floriana, whilst the Plague was raging there with great violence.

" The third house contaminated in casal Nasciar was that of Signor Michel Vasallo, a lugotenente, who had his wife and daughter living with him. He was infected by handling papers which were received without undergoing fumigation.

" The fourth introduction of the disease was occasioned by one Maria Schembri, who had had communication with her daughter at Bircarcara whilst suffering under the disease.

" The fifth introduction occurred in the month of September* in the family of Grazia Galea, consisting of six persons. As the malady at this time began to decline very rapidly, this event appeared the more unaccountable. It was supposed to have arisen from her husband having had intercourse with a certain cattle-dealer, who was in the practice of frequenting an infected place called Saint George's Tower. From the house of Grazia Galea the disease was carried

* Nasciar was contaminated again in December by communication with a house near St. George's Tower; but the contagion was arrested in a few days, without spreading farther.

to that of one Pietro Mula, a relative of hers, who had a large family; but happily the contagion was arrested as promptly in this as in any of the former instances.

"The resumé of Casal Nasciar is as follows:

Inhabitants of the casal....	2800
Introductions of Plague....	5
Houses infected	6
Inhabitants of these houses	26
Deaths	10
Recovered	5
Propagation	1

"Out of more than twenty thousand persons occupying the line of casals from Bircarcara to Mosta, not above five hundred in all were taken off by Plague; and of these by far the greater number in Bircarcara, in consequence of the spirit of insubordination which disgraced that place, and which completely defeated the precautions attempted to be put in force by the Police Department. Bircarcara was besides much more populous than

any of the other towns mentioned. Yet even in this casal, as soon as adequate measures began to be enforced, the mischief was almost immediately put a stop to.

" Several additional instances might be cited to the same effect; Casals Zeitun, Tarxien, Gudia, Micabiba, and others, furnishing equally clear and indubitable evidence as in any of the foregoing cases, that energetic measures will always be attended in like circumstances with equally happy results.

In conclusion, the Plague was introduced into the Island of Gozo by a man belonging to casal Curmi, several of whose family had died of the disease. It rests upon respectable testimony, that this person, previous to his removal into quarantine, found means to conceal a box, containing wearing apparel, in the cottage where he resided; and that at the expiration of his quarantine he re-entered his cottage *, out of which he took the box, and,

* It was currently represented, that this cottage was, at the time of concealing the box, included within a cordon of

after paying a visit to *Valetta, hired a boat, and transported it to Gozo†." [Here end the statements of the Captain of the Port.]

When the whole of the preceding details are summed up, and considered in connexion with the authority upon which they rest, few, I believe, who are not under the influence of a strong bias, would hesitate to admit that the Plague is, in the strictest sense of the term, a contagious disease, since it has been made out, that contact with an infected me-

troops which invested the town; but the troops being shortly afterwards drawn closer to the casal, the cottage was, in consequence, left in the rear, which afforded an easy opportunity of re-entering it, and taking out any susceptible article without exciting suspicion.

* This event happened about the 8th of March; and Valetta had obtained clean bills of health on the 14th of January.

† It is farther stated, that this man made a present of the clothes as a marriage gift to one of his family residing in this island, who were immediately afterwards attacked by Plague, and were the first persons infected. Whether the above account of the box be strictly authentic or not, it is certain that the Plague broke out immediately in this family after the arrival of their relative.

dium, had, *ipso facto*, preceded its propagation, in every instance where the sources of contamination could be investigated; and the weight of evidence is further augmented when we reflect that not one solitary well attested example can be adduced of any individual being attacked, where the proofs were absolutely conclusive that some kind of contact, direct or indirect, was not known, or might not be strongly suspected to have gone before the seizure. Were the reverse of this the true state of the matter, it is obvious, that instead of finding it difficult to discover such instances, they must have been incomparably more frequent than those which could be traced to contagion.

Sketch of MALTA shewing the relative position of the CASALS
referred to throughout Chap IV commencing at page 87
LA VALETTA
FLORIANA
Zabbar
Zeitun
Gargul
Paola
Tarxien
Guasciac
Bircarcara
Nasciar
Balzan
Lia
Mosta
Atard
Curmi
Luca
Gudia
Chercop
Sasi
Micabiba
Zurich
Zebbug
Siggeui
Crendi
CITTA VECCHIA
Rabato
Dingkli
WESTERN DIVISION.
CENTRAL DIVISION.
EASTERN DIVISION.
Great Road
Central
Scale
1
2
3 Miles.
Billings Surveyor Cheltenham.

CHAPTER IV.

SEC. I.

Farther Evidence in proof of the contagious property of the Plague, drawn from the extent of contamination in each of the Casals, as influenced by their locality—by their distance, in respect to the principal sources of infection— and other circumstances.

THE main error into which most of those writers have been betrayed, who, whilst denying the contagious character of the Plague, ascribe its production to the state of the atmosphere, seems to me to hinge upon their assuming as the *generating* cause, what is properly only a predisposing or concurring cause.

Their notion of its atmospheric origin proceeds chiefly from the disease being observed frequently to arise and spread at particular seasons of the year; and the hypothesis is considered to receive farther support from the fact, that other diseases which are allowed to be manifestly not contagious, are most prevalent under a peculiar state of the air, and occur, generally, at the same seasons as the Plague. Thus, from the apparent agreement of these diseases in this one point, of arising usually at the same time of the year, aided, perhaps, by some accidental or imaginary similitude in certain of their features, it becomes, at length, assumed as a demonstrated truth, that they are all of the same class, differing only in the modification, or severity of the symptoms; and, accordingly, arguments are pressed into the service in as great number as ingenuity can rake together, for the purpose of propping up the assumption. Should the instances which have already been presented prove insufficient to shew how incommensurately this atmospheric

doctrine accounts for the production of the late Plague in Malta, I fear nothing which I can add would be likely to place the matter in a clearer light. Such, however, as coincide with me in the cogency of the preceding statements, will probably discover in those which follow, still farther grounds for excluding a peculiar state or constitution of the air as the productive source of Plague. I accordingly pursue my proofs by noting the extent of mortality in all the principal towns and villages * of Malta, accompanying the statement, as far as my documents will allow, with an account of the situation, soil, and other circumstances, of each, that it may be seen how far the vitiation of the atmosphere, by local causes, is entitled to be regarded as the generative source of the disease in those places. The deaths are carried up only to the 15th of October, about which period the violence of the malady was nearly spent.

* The following account of the situation and circumstances of the different casals may appear rather minute and tedious;

I much regret my inability to furnish farther documents besides those already produced, with reference to the *particular modes* by which the contagion was introduced into each of the remaining casals. Indeed, with the exceptions already noticed, I never had any means of coming at the authorities from which such information could be authentically obtained; and I am unwilling to advance any thing that is not derived from competent testimony.

The twenty-four principal casals of Malta may be comprised under the three divisions of *eastern*, *central*, and *western*, formed by drawing a right line from Valetta, making an angle of rather better than sixty degrees with the main road, communicating between that place and Citta Vecchia, which is the second principal city of Malta.

but it seems to be of importance, as favoring the view which the foregoing facts present, with regard to the contagious spread of the disease; and by the full statement I also obviate any unfavourable inference which might be drawn from a partial detail.

The eastern casals lie out of the direct road of communication with Valetta, and are twelve in number *viz.*

Gudia
Luca
Zeitun
Zabbar
Chercop
Zurich
Tarxien
Paola
Sasi
Guasciac
Micabiba
Crendi

The central division lies in the very direct line of intercourse with Valetta, and includes six casals, *viz.*

Curmi
Zebbug
Siggeui
Dingkli
Atard
Rabato

The western division is not so much out of the line of communication with Valetta as the eastern, some of the casals which it comprises being, in fact, equally close to the direct high road from that city, as those in the central division. The western casals are six in number, *viz.*

Bircarcara
Lia
Nasciar
Mosta
Gargul
Balzan

The circumstances of each of these casals shall be considered individually in the order of their enumeration; and, first, of casal Gudia. This town occupies an open situation to the eastward of Valetta, the name signifying in the Maltese language. "high ground." It possesses the advantage of a dry soil, in as great a degree as any other part of Malta. Yet Gudia * was the first

* See the Government Journal of Malta.

casal in which a death by Plague was reported to have taken place. This event happened about the 18th of May, when three persons died — in June two, and in July one; after which the contagion was arrested. Casal Gudia is distant* a little more than three miles from Valetta, and three quarters of a mile from casal Luca, which was shortly afterwards much contaminated.

Casal Luca lost the first case by Plague on the 25th of May—in June, twenty-two—in July, seventeen, and one only in August, when the disease was subdued. It is nearly two miles and a half from Valetta, and not quite a mile and a half from Curmi, which was afterwards one of the most severely visited towns. Casal Luca stands also upon high ground.

In Zeitun, a place of rather large extent, the contagion appeared about the 27th of

* The distances from Valetta, and between the casals, are calculated in a straight line, and not according to the measurement of the roads, which I had no opportunity of obtaining.

May, during which month only one person perished—in June four, and in July, six, when it was finally arrested. This town is about two miles and an half from Valetta, and a mile from Zabbar, a casal which was visited with some severity soon afterwards. Zeitun lay much out of the road of direct communication with Valetta, and likewise occupies an elevated position.

At Zabbar the Plague made its appearance about the 30th of May, when only one person was carried off—in June, six—in July, twenty-eight, and in August, nine, —after which the disease was suppressed. Zabbar, occupying a high spot about a mile and an half from Valetta, lay nearer, and had greater intercourse with the towns within the fortifications, than any other casal in this division of the island.

Chercop lost one solitary case only, on the 4th of June. It is about three miles and an half from Valetta, and not quite one mile from casals Luca and Gudia respectively. It is also not much more than a quarter of a

mile from casal Sasi, which will afterwards be noticed as having, with a few others, entirely escaped contamination. It stands equally on an eminence as Sasi, from which it is separated by a short distance of low ground.

Zurich, a casal of considerable magnitude, was visited by Plague on two different occasions; the first about the 17th of June, in which month five persons died. The second attack took place in July. It lies not more than a quarter of a mile from Sasi, about four miles and an half from Valetta, and three quarters of a mile from casal Micabiba, which will presently be noticed as slightly contaminated. The air of Zurich is accounted by the natives to be particularly healthful, standing partly on the same elevation as Sasi, and partly declining into low ground

Tarxien, a town of moderate extent, was not assailed until the latter end of the month of July, when only one individual was carried off by Plague, and the casal was never afterwards infected. Tarxien, placed on an

eminence, lies about a mile and something better than three quarters, from Valetta; rather less than half a mile from Paola, and not quite a mile from Zeitun. It deserves to be particularly remarked, in respect to this casal, and casal Paola, that they had only a few solitary cases; a circumstance the more extraordinary, as Paola, to which it is so contiguous, was long known to be, without exception, the most unhealthful spot in Malta, being situated in the vicinity of wet ground, formed by the tide, running up where the shore is flat. Yet, at Paola, only two cases of Plague occurred; the first not until the 26th of July, and the last in August. The distance of Paola from Valetta is nearly a mile.

Casal Sasi, as already noticed, escaped the infection. It is about four miles and an half from Valetta, and less than a mile from Micabiba. Some have alleged, that Sasi, on account of the great purity of its air, enjoyed a peculiar exemption from the prevailing contagion. But, in reality, this opinion is, in a great measure, gratuitous, there

being no reason, deducible either from its situation, soil, or any local peculiarity, to justify the supposition, that this village was favored by purer air than many other places which suffered severely. Besides, the closely adjacent infected towns possessed advantages in an equal degree as Sasi, in regard to the soil, and, every thing conducive to their salubrity. If it be true, that Sasi escaped solely on account of the peculiar purity of its air, how shall we be able to account for the entire escape of four other casals, and particularly of casal Crendi, which we shall presently see had some obvious disadvantages to encounter. Can we suppose that the air of these four other casals which escaped as well as Sasi, during the late Plague, was more pure at that time than in the Plague of 1675, when every casal in Malta was contaminated, with the solitary exception of Sasi? It may not be out of place to revert to the remarks which have already been made respecting casals Paola

and Tarxien, as farther supporting the opinion, that impure air of itself is insufficient to produce Plague; for, if this were the case, we have had the indubitable evidence of local causes for concluding that these places must have been among the most contaminated spots in the island; the reverse of which was the fact.

Guasciac happened, likewise, to be one of the fortunate few that entirely escaped the general visitation. It is not altogether three miles distant from Valetta, nor above half a mile from casals Tarxien, Zeitun, and Gudia, respectively.

Micabiba lost five cases by the disease in the month of June, and one only in July, when the mischief was suppressed. It is about four miles from Valetta, a little more than two miles from Curmi, a mile and a quarter from Luca, and a mile and three quarters from Zebbug.

Casal Crendi, the skirts of which occupy rather low ground, was another of the favoured few which were preserved in uninter-

rupted health, though situated not more than half a mile from its contaminated neighbours, Micabiba and Zurich. It is, however, well ascertained with regard to casal Crendi, that from the very first alarm of the Plague, the inhabitants conceived such a dread of infection, as determined them to exclude, of their own accord, all strangers from coming within their walls. Had this caution not been taken with so much promptness and determination, it is very probable this casal would have been not less unfortunate than most others, since, besides possessing no advantages in point of soil or situation, the houses were rather of a meaner construction than ordinary, and were inhabited by a very poor class of people.

In conclusion, I may observe that these eastern casals occupy the lowest and flattest quarter of Malta, the greater numberof them being situated towards the north-east point of the island, which may be considered as the lowest edge of an inclined plane, having its highest elevation on the S. S. W. side, where

it rises nearly two hundred fathoms above the level of the sea. The low and flat surface of the eastern division, renders it less inconvenient for cultivation; for which reason it contains double the number of casals in proportion to the number of acres.

The first casal in the central division is Curmi. This place, lying in low ground, was one of the greatest sufferers in the island. It became contaminated about the 24th of May, in which month two persons perished —in June, fifty-six—in July, one hundred and nine—in August, one hundred and forty-two—in September, one hundred and eighty-one—and in October, up to the fifteenth of the month, fifty. Curmi is said by the Maltese to derive its application from its *vicinity* to Valetta, from which it lies about two miles, and is nearer to it than any other casal on the *direct* road from that city, and, consequently, more exposed to communication with Valetta, than any other casal in Malta. It is placed directly between Zebbug and Valetta, from the former of which

it is about a mile and a quarter distant, nearly the same distance from Luca, and not much beyond half a mile from Bircarcara, which will presently be noticed as one of the most desolated casals ; so that Curmi was exposed not only by its contiguity and thoroughfare with the chief source of contamination, Valetta, but likewise by its proximity to three other casals, which were most peculiarly marked out for devastation, in the very centre of which it is situated. I was informed by the Inspector General of Police, whose indefatigable exertions and ability in putting a stop to this frightful calamity, entitle him to the highest praise, that the great mortality in Curmi proceeded from the want of proper restrictive measures imposed at the beginning, and this opinion was fully borne out by the results of his own system of Police ; for, from the moment that that system was put into full operation under his personal direction, and that due obedience was secured by military authority, the communication being completely intercepted be-

tween Curmi and Valetta, and from the other casals, by a cordon of troops investing the town on all quarters, the disease yielded with rapidity. The decisive measures adopted at Curmi so very speedily accomplished their object, as to induce the Inspector General to think his presence no longer required, and that he might withdraw his personal superintendence without detriment to this casal in behalf of another, where the disease was spreading rapid desolation. He was, however, obliged very speedily to retrace his steps to Curmi, the contagion having, as it were, rekindled during his absence; but which, on his return, was checked with the *same* expedition as before, by the enforcement of the *same* measures *.

The low situation of Curmi may suggest the idea of its being damp, and therefore particularly exposed to pestiferous miasms,

* This casal continued to have cases for a great length of time, owing to two causes—the pilfering, and the concealment of infected articles.—See Government Gazette of Malta.

but if this be admitted, we shall be reduced to the difficulty of shewing why the Plague had not commenced its ravages here in the first place; instead of which this town was not infected until a month and three weeks after the importation of the disease, and five weeks after the contamination of Valetta. But the allegation is set at rest by a consideration of the circumstances of Zebbug, the next casal which claims our notice.

Casal Zebbug had the Plague imported about the 26th of May, when two persons died—twenty-five in June—one hundred and thirty-eight in July—two hundred and seventy in August—two hundred and thirty two in September—and seven in October, up to the 15th of that month. This place, though so frightfully ravaged, is situated on the ridge of a hill, which extends several hundred fathoms from North to South. The soil is perfectly dry, as might be expected from its elevation; and, in short, it is as free as any place can be imagined from any kind of local impurity. Yet here the disease made

its most unsparing havoc. Zebbug lies about four miles on the main road from Valetta, and a mile and a quarter from Curmi, so that, if the expression may be allowed, it lay not less on the *high road* of contagion than Curmi itself.

The disease did not reach casal Siggeui earlier than the 11th of September, in which month eight persons perished; and only one other case occurred up to the 15th of October. This casal is about three quarters of a mile from Zebbug. We have the authority of the Captain of the Port for stating, that the contagion was arrested in this town by prompt separation, the burning of susceptible goods, and the immediate and effectual purification of houses; and in a memorandum which I kept of some of the infected towns, I find, likewise, that the Inspector General of Police had noticed to me the suppression of the disease in Siggeui, as a remarkable instance, to shew how completely the contagion is subject to the power of restrictive measures, not one case having occurred there

after his orders were carried into effect. This casal is situated in a valley which branches into three directions, and is a place of only moderate extent. The distance from Valetta is about four miles and an half.

Dingkli, a comparatively small casal, was not assailed until the 8th of October, when but one individual perished. This is the most southern casal in Malta, partly occupying a valley, about a mile and three quarters from Rabato, the nearest contaminated town, and not less than eight miles from Valetta.

* Casal Atard had the Plague introduced about the 22d of May, during which month there occurred only one death by Plague; the

* In respect to this and some of the succeeding casals, the deaths are already noted in the statements of the Captain of the Port, so that their recapitulation in this place may appear superfluous. I have, however, considered this objection more than counterbalanced by the greater uniformity given to the narrative; as well as by the opportunity afforded to the reader of comparing with that officer's details these additional extracts taken from the official reports of the Health Department.

next death happened in July, when the infection was completely eradicated. This town lies about three miles and an half from Valetta, better than half a mile from casals Balzan and Lia, and not much above a mile from casals Curmi and Zebbug. That this place was not visited more severely might, therefore, reasonably excite surprise, had we not so good authority as that above cited, for knowing that the extermination of the disease was accomplished by the prompt precautions which were adopted by its inhabitants *in limine;* and, perhaps, a more decided instance could not possibly be adduced to prove that the malady is under control of early cautionary measures than the good fortune of this casal presents. For, in no respect was casal Atard favoured by any advantages, actual or supposable, in point of air, soil, or situation, above either of its afflicted neighbours, Curmi or Zebbug, the close adjacency of which, but for these measures, must have exposed it to a peculiar devastation. The confines of casal Atard lie

in low ground, skirting the same valley in which part of Curmi is situated.

The Plague commenced in Rabato about the 21st of May, when only one individual was its victim. The next two deaths occurred in June—nine in July—six in August—ten in September—and five in October, up to the 15th of the month. Rabato was not surpassed in any part of Malta, not even by Valetta itself, in point of dryness of soil. It is distant about six miles from Valetta, with which it communicates by the great main road, and not altogether two from the lamentably desolated casal Zebbug.

Here closes the list of central casals, which, we have seen, were ravaged in a degree exceeding any of the former, and this, notwithstanding that several of them occupied situations at a greater distance from Valetta, than most of those which are included in the eastern division. I infer, therefore, that their disasters must have sprung not so much from their contiguity to Valetta, as

from their being situated on the *direct* road, and in the line of immediate thoroughfare with that city and other infected places.

The first town to be noted on the western division is Bircarcara. At this place the Plague manifested itself about the 2d of June, in the course of which month twenty-five persons were carried off—in July, fifty-seven—in August, eighty-nine—in September, seventy-four—and in October, up to the fifteenth of the month, twelve persons. Bircarcara, as already stated, was very populous, the houses, however, in general, large and commodious. There were no circumstances attaching to the soil of Bircarcara, although it occupies a valley, that could, by the most strained hypothesis, explain why it should have been visited by Plague. On the contrary, its standing upon a nearly naked limestone rock, must have conferred, if any thing could, a total exemption from every kind of noxious exhalation; in evidence of which I may remark, the word Bircarcara in Maltese signifies *lime-pits*. The fate of this town is

fully explained, when we take into account the spirit of insubordination which has been mentioned as prevailing there for so long a time, and its contiguity and direct communication with Valetta and casal Curmi, from the former of which it is about two miles distant, and not more than half a mile from the latter.

In casal Lia the Plague made its first appearance about the fifth of June, during which month only five persons died, the infection being suddenly extinguished by the vigorous exertions of the Police. This town lies in low ground, about three miles and three quarters from Valetta, half a mile from Nasciar and about one from Bircarcara. Here again we have proof equally strong as in the instance of casal Atard, of what efficacy a coercive system of health is productive—for, in fact, casal Lia was as much exposed both from situation and contiguity to infected sources, as that place or any other which has been noticed.

Casal Nasciar, situated on an eminence,

and commanding a view over a great part of the country, was invaded by Plague about the 11th of June, in the course of which month five persons died—in July, two—and in September, I think not more than three. Nasciar lies nearly a mile and a quarter beyond Bircarcara, and three miles and three quarters from Valetta.

Casal Mosta, occupying a rising ground about four miles and an half on the direct line from Valetta, was infected about the 12th of June, when one person died—in July, nine—in August, fifteen—and in September, eight*. The disease was then suppressed by the prompt separation and removal of the sick and infected, the burning of their susceptible goods, and the whitewashing and expurgation of their houses. This casal is the most distant in the western division. The nearest towns are casals Lia and Nasciar,

* It appears in the statement of the Captain of the Port, that there is a difference of twelve in the number of deaths when compared with this, which may have arisen from his not believing some of the cases to be Plague.

from each of which it lies a little better than half a mile. The soil and situation are alike favourable to the health of the inhabitants.

To Gargul and Balzan, the last two principal casals in Malta, the infection never extended, owing, as we have already been informed, to the strict and unrelaxing caution which their inhabitants observed to prevent any intercourse with their infected neighbours. Neither of these places possessed any peculiar advantages, either from soil or position. The good fortune of Gargul may, however, partly have been owing to its being the most remote town to the West, and lying out of the line of any direct communication with Valetta, or, with any other contaminated place in its vicinity, with the single exception of Nasciar. It also occupies a rising ground. Balzan is almost a continuation of casal Lia, lying in the same valley between it and Bircarcara, and, consequently, from its contiguity to the latter, was the more indebted for its security to the active measures which have been noticed.

Gozo was not contaminated until about the

8th of March, 1814. From what has been said of the soil and cultivation of this little island, I should think it very needless to take pains in shewing that it enjoys every possible exemption from any of the known, or even suspected causes of atmospheric impurity. It is moreover separated from Malta by a distance of three miles and three quarters of sea. I am not enabled to annex a statement of the number of deaths in Gozo, having left Malta before the disease had ceased to pervade that island. But it rests upon the most satisfactory authority, that owing to the energetic measures which were followed up, it lost, comparatively, but very few in proportion to the population: I think, in all, not above eighty.

That the relative mortality of the casals in each of the three divisions may be seen at a first view, they are here presented in a tabular form, with their respective dates of contamination, and in the order of their successive attacks, as extracted from the official reports, published by order of the government of Malta.

	Casals.	Dates of Contamination	Deaths to the 15th October
Eastern Division.	Gudia	May 18	 6
	Luca	 23	 41
	Zeitun	 24	 11
	Zabbar	 30	 44
	Chercop	 4	
	Zurich	 7	 8
	Micabiba	June 1	 6
	Tarxien	July 21	 1
	Paola	 25	 2
	Crendi	.....	.....
	Sasi	.....	.....
	Guasciac	.....	.....
			Total, 119
Central Division.	Rabato	May 20	 33
	Curmi	 22	 530
	Atard	 22	 2
	Zebbug	 26	 675
	Siggeui	September 11	 9
	Dingkli	October .. 8	 1
			Total, 1250
Western Division	Bircarcara	May 28	 252
	Lia	June 6	 5
	Nasciar	 23	 10
	Mosta	July 8	 33
	Gargul	.....	.....
	Balzan	.....	.....
			Total, 300

It is difficult to ascertain the exact day on which the contamination of each of these casals took place. I am pretty sure, however, that few of the dates, here stated, vary above one day, from the most authentic reports.

SEC. II.

From the particulars which have been just brought to view, we observe with how little respect to air, soil, or situation, the Plague carried its desolating triumph through every part of Malta. If we look at the casals, in reference to their respective distances from the common source of contamination, Valetta, and from the towns most infected in their neighbourhood, we shall find, just as we ought to expect during the prevalence of a contagious disease, that, *in general*, the degree of severity with which each suffered, was in the ratio of its degree of communication with those sources of infection; or, to use a more definite and precise mode of expression, in the ratio compounded of its direct communication with, and vicinity to,

Valetta, and the adjacent infected towns. Thus it has been shewn, that casals Curmi, Bircarcara, and Zebbug, situated not far from each other, and on the direct and most frequented high road from Valetta, were depopulated to an extent far exceeding any of the rest. Mosta, Rabato, Luca, and Zabbar, were next in order the greatest sufferers; Mosta lying on the direct high way from Valetta, and near to casals Lia and Nasciar. Rabato, within two miles of Zebbug, (the most infected of all the casals,) and likewise on the direct high way from Valetta; and Luca, occupying a situation in a right line, though not so immediately on the most frequented road from that city, and within a little better than a mile of casal Curmi, which was the second in order of the most depopulated towns. These casals were, consequently, not only in a particular manner exposed to the common source of contamination by their lying in a direct road and perpetual thoroughfare with Valetta, but they must also have mutually contributed, by their contiguity to one ano-

ther, greatly to augment the number of pestiferous introductions in each. Casal Zabbar being included in the eastern division, and less exposed to communicate with Valetta than any of the towns or villages already mentioned in the central division, as occupying the main road from that city, was, however, situated nearer to the towns within the fortifications than any of the other eastern casals; and with these towns, it may be presumed, there existed a communication, more or less free, until the Public became sufficiently aware of their danger, and the necessity of a cautious intercourse. Consequently, as Zabbar would be exposed to incur so much greater risk than any other eastern casal, of being contaminated from these towns, we find the fact entirely corresponded with such a calculation.

It may be thought that the escapes or slight contamination of the casals near to the coast, were owing to the greater purity of the air in those places. But that this was not the case is highly probable, from the fact that the

casals in the interior, as well as on the coast which were farthest removed from communicating with Valetta, and other infected places, all experienced a much slighter visitation than any others, *e. g.* Gargul—Mosta—Dingkli— Crendi—Zurich — Sasi—Siggeui—Micabiba—Guasciac, and Zeitun, the only apparent exceptions demanding notice, being Rabato and Mosta, the sufferings of which, notwithstanding their distance from Valetta, are to be accounted for by their lying on the direct road between that city and Citta Vecchia, which road is the great thoroughfare of the island, or, if the expression may be admitted, the main artery of the circulating population. That the contiguity of the casals to the coast could not have availed, as conferring security from the contagion, we have already had evidence in the fate of Valetta, Floriana, and Zabbar. Generally speaking, however, as the most distant places were the least exposed to intercourse, they were accordingly the least infected.

Thus I have endeavoured to point out

the cause of the comparative degrees of severity with which the different casals were assailed; and I believe, if all the circumstances are well weighed, the evidence will appear abundantly conclusive, that the only satisfactory mode by which we can adequately explain the relative extent of their mortality, is their *intercourse* with contaminated sources. But, when we reflect *how much depended upon the activity of the Police, and the extent of voluntary obedience given by the inhabitants of each casal to the rules prescribed by the Health Department*, it must appear unreasonable to look for a principle which should apply with any thing like exactness in accounting for their individual sufferings. Enough has, however, been produced, to shew that the infection was not influenced in its progress through those towns, by the local causes of a vitiated atmosphere.

It may be farther observed, that when to the *distance* of the respective casals from the sources of contamination, the advantage of

a *thin population* was superadded, the infection became still less extensively disseminated; for instance, in casals Crendi, Sasi, Chercop, Dingkli, and Siggeui, each of which contained, comparatively, but a limited number of inhabitants: and in this way, we are enabled to explain why the infection should have been diffused more rapidly in Valetta than any where else, for, besides containing a much more numerous population, it is well known that the intercourse in that city was greatly promoted by the extensive connexions which resulted from commercial speculation. On the same grounds, it is easy to account for the greater difficulty which was experienced there, in arresting the progress of the contagion, than in most other places. I extract the following remarks from the Government Journal of Malta as expressive of the great alarm entertained on account of the general prevalence of this commercial spirit in Valetta: —"Considerando una citta poco estesa, e sopracaricata da un' immensa popolazione, osservando lo spirito d' industria de' suoi

abitanti, che forza ogni contatto, guardando il vasto commercio, che vì si facea, ed il continuo trambusto di nazionali e di stranieri, e' angustia dì alcune strade, la ristrettezza delle case nelle quali sono gli uomini affastellati gli uni sopra gli altri, noi potevamo aspettarci di vedere in quest' isola maggiori devastazioni cagionarsi della peste."

The danger would, doubtless, have been much augmented by the avarice of those engaged in the work of expurgating houses, and burning susceptible articles, who were known to secrete and sell all such articles, whenever they could elude the vigilance of the Police—particularly wearing apparel.

CHAPTER V.

Evidence continued, drawn from considerations which shew that an impure state of the atmosphere, is insufficient to account for the generation of the Plague.

SEC. I.

Of filth—crowding—and want of ventilation—as supposed causes of a pestiferous atmosphere.

It has been observed, that casal Zebbug was ravaged to an extent far exceeding every other, though it is one of the most favored spots in point of locality, cleanliness, and ventilation, of any in Malta; we have seen also, that casal Zurich did not escape contamination, though enjoying as many advantages conducive to salubrity as either of its uncontaminated neighbours, Crendi or Sasi. To these examples, taken as they first present themselves, many, equally striking, might be added. Among a number of others which have not been noticed, I may annex the

following:—The Fourteenth Regiment and Artillery, quartered in one of the most infected parts of Valetta, and surrounded by a crowded neighbourhood, were preserved from the contagion throughout the whole period of the disease, by the early restrictions imposed by their commanding officers, and an unrelaxing vigilance to interdict every kind of intercourse with the Public. De Rolle's * regiment and the †Third Garrison Battalion, were, however, infected, notwithstanding that they occupied, without exception, perhaps, the very highest and most healthful situations in or about Valetta.

It never was accounted for with absolute certainty, how the contagion found its way into these regiments; but, in respect to De Rolle's, there is not much difficulty, at least in forming a satisfactory conjecture, as the inclosure near to the Barracks admitted of

* De Rolle's was infected about the 25th June.

† This battalion was attacked by the Plague, I think, about the 27th July.

a communication through its bars with the outside, suggesting a reasonable presumption, that some pestiferous article may have been received through this enclosure clandestinely, probably under cover of night.

The Sicilian regiment had the good fortune of having only one person infected during the whole period of the Plague, which was evidently the consequence of the vigilance of their commanding officer; that gentleman, whom we have already noticed in the capacity of Inspector-General of Police, as so active in arresting the contagion*; and, perhaps, no other instance could be selected to exhibit the benefit of early precautions in a more striking manner than the security enjoyed by this regiment, notwithstanding the peculiar exposure of its situation, being quartered in the town of Floriana, which, for a long time, was ravaged with

* I have not been so fortunate as to discover the cause of the importation of the contagion into this regiment. Its sudden extinction is among the clearest proofs of what proper means may effect under active and judicious superintendence.

extreme severity, and, in a part of it, close to streets filled with pestilence, and remarkable for their crowding and every kind of nastiness.

Those, who in the face of such facts, would still maintain that an impure atmosphere was the exciting cause of Plague in these regiments, ought, at least, to be prepared to shew what grounds did actually exist for such an assumption.

But, although I conceive myself justified to deduce from the above particulars, that local causes, independently of contagion, are insufficient to engender the Plague, it is by no means meant to advance that an impure atmosphere may not powerfully predispose to render pestilential contagion more active, or, in other words, more easily transmitted from one subject to another. Closeness, crowding, and filth, we know, will greatly favor the progress and aggravate the malignity of other contagious diseases, and the most virulent of them, small-pox, for example, may be rendered innocuous at only a

very short distance from the infected subject, by adopting simply the precaution of ventilation and cleanliness. Experience teaches us also, that fomites are much more ready to transmit contagion than the bodies of the sick themselves, but if these infected matters are exposed to the open air, they presently lose the power of communicating the disease, by the closest approximation, or even by contact itself. It is familiarly known to those engaged in the service of Fever Hospitals, that the porters employed to carry the sick are almost never assailed, nor even the washerwomen, whose daily office it is to cleanse the foul linen and bedding belonging to wards filled with the most malignant cases of typhus. As, therefore, the contagious power of typhus, and of small-pox, may acquire or lose force by the state of the air, as to purity, it is not less probable that pestilential contagion is subject to similar modifications, and becomes either more virulent by uniting with foul air, or proportionately less so by dilution with air of a purer quality. How-

ever the thing is to be accounted for, there certainly is no clear reason to forbid that a corrupted atmosphere may not give to pestiferous matter a greater activity, or render it more easily received into the human system. Should it be still maintained, however, that local causes are of themselves fully and independently adequate to the production of Plague, it will be incumbent on those who support this opinion, to shew why the disease first broke out in the centre of one of the most spacious streets in Valetta, and was so long confined to *one house* in that street to the entire exclusion of those more crowded, narrow, and unventilated allies* which were the abodes of poverty and privation: Any local causes which could be presumed to operate in producing a pestiferous atmosphere in Strada St. Paolo, where the first case appeared, would, for instance, equally, if not much more virulently, be called into action in that part of the town called the Mander-

* In my general description of Valetta, it escaped me to notice these allies.—They lie principally about the outskirts.

aggio*, which occupies one of the lowest and most confined situations, and includes a number of lanes, so narrow, that their inhabitants might actually shake hands from the opposite sides, inclosing, moreover, within this limited compass, not less than two thousand persons of the meanest class: yet the Manderaggio was not infected until the 26th of May, a month and ten days after the contagion first entered the Island.—It is unlikely, too, that the Plague should have been confined to the *one solitary house* for so great a length of time after its introduction into Valetta, and not have been produced simultaneously, more or less, in every quarter of it, which was equally exposed to the operation of local causes. Besides, it may be asked, when the disease did break out in other houses, why it should have been in those which were distinguished by no peculiarities in regard to atmospheric influence, but distinguished only by the circumstance of their inhabitants

* See the Map.

having been associates of the first infected family.

Neither is it less inconsistent with probability that Valetta should have been for so long a period the *exclusive nidus* of pestilence, seeing that there were villages and towns in the Island, where every tangible cause of local impurity existed in a still greater degree, and which places were known to be much more frequently unhealthful than this city. On the principle of local production, the same difficulties present themselves in accounting for the protracted escape of Floriana and other towns within the fortifications contiguous to Valetta, the closeness and crowding of which were in many places not less apparent than in the most populous part of the Manderaggio. Yet, in one of these towns called Sanglea *, no decided case was discovered throughout the whole course of the malady.

It has been said in explanation of some of

* Vide Malta Journal.

these difficulties, that the Plague does not always invade the most insalubrious places, but is carried from the first contaminated spot to others in the "course of the winds." This, however, is only making a vague assumption to solve a difficulty. It is abundantly clear, from the order in which the casals were visited, that this opinion cannot for a moment be sustained, for instead of their being assailed in a direct line, which must be the case, were the winds the vehicle of the infecting matter, those casals suffered among the very first which were situated at the most remote distances from each other, and in opposite directions. Moreover, if the air of an infected place could acquire a degree of virulence intense enough for its pestiferous power to be transported to the length of some miles, it is absurd to suppose that the populous intermediate towns should have entirely eluded its noxious influence, and, in fact, it is impossible, going on such a supposition, that the malady should not have at once, more or less, indiscriminately visited the whole

of Malta, the confines of which are so very limited, and its towns so numerous and contiguous to each other *. Instead of this a month elapsed after the appearance of the first case in Valetta before any one inhabitant of the casals is reported to have fallen a victim to the disease; and this first case occurred where? in casal Gudia, a place, as before remarked, peculiarly unlikely to prove unhealthful by the operation

* Had the disease arisen from the air, it is clear that neither shutting up nor separation could have been of more avail than if the same measures were resorted to for the suppression of intermittent or remittent fevers; and that in Malta, as well as in Walcheren or Gibraltar, the malady must have pervaded every place and every class of its inhabitants without discrimination. Of this fact, in reference to Walcheren, I am enabled to speak from experience, and if I could not, it is too well attested by the loss of one of the finest armies that ever left our shores, few of whom found any asylum from the climate, excepting by escaping from it altogether. Dr. Gardiner, naval Surgeon at Gibraltar, has declared, that in the epidemic which afflicted that place whilst the Plague was raging in Malta, "the disease did not spread from any focus, but broke out in fifty different places at once." The fact is farther attested by other most respectable witnesses.—Vide the works of Drs. Bancroft and Burnet.

of any causes of a local description. On the local principle it is still farther at variance with reason and probability, that after the Plague had ceased in Valetta, it should continue to ravage the interior ; and that when it had almost ceased in Malta altogether, it should have sprung up in Gozo after an interval of nearly twelve months from the first introduction of the disease into Malta. If the disorder could have depended for its production on a cause so unconfined in its application as the one in question, it is to me utterly inconceivable that such *long* periods should have intervened between the dates of its appearance in each of these places. I find it also recorded of the Plague of 1675, that a considerable interval elapsed from the contamination of Valetta until that of Gozo.

But farther: were the Plague generable by local causes, it would follow, that when Valetta was released from the malady, those causes must have ceased to possess the power of vitiating the atmosphere. It is universally known, however, that in Valetta the same

manifest causes existed in a still greater degree for some time *after* the Plague was nearly suppressed, than previous to its appearance in that place, as from the want of the usual facilities, and the confusion that prevailed, there was more than the usual quantity of filth of every kind, collected in the habitations of the poor. If to this, it should be objected, that the *general* constitution of the atmosphere was such as to render local causes unoperative in Valetta when that city became healthy, it may be asked, how should such a favorable alteration in the general state of the atmosphere have been less fitted to produce the same salutary effects in other parts of the island as well as Valetta, and more especially in those casals where the disease was never so severely felt, or which were, at least, equally exempt as this city from every thing fitted to occasion a vitiated atmosphere—for instance, in Rabato, Bircarcara, and Nasciar, towns which continued to have cases for several weeks after Valetta was free from infection.

If the general state or constitution of the

air became really such as to neutralize the pestiferous power of local causes in Valetta when the Plague disappeared there, how are we to account for those causes being roused into activity in Gozo—an island in all respects so favored with all the requisites of a healthy situation, and which had escaped the disease for so long a time.

Should it be said that Rabato, Nasciar, Bircarcara, and Gozo, were each of them more liable to be contaminated than Valetta, in consequence of the soil extricating a great abundance of those pestiferous miasms, it may be again enquired, why were not those places visited in *the first instance*, instead of which no death by Plague is reported in Rabato for thirty-six days after Valetta was infected; in Nasciar for thirty-nine days; in Bircarcara for forty-four days; or in Gozo for nearly eleven months after the announcement of the Plague in Valetta.

Finally, as the period of a hundred and thirty seven years which elapsed since the former Plague of Malta must have produced

a recurrence of every possible cycle of combination in regard to the elements of atmospheric impurity, does it not militate against every appearance of truth, that the disease should not have visited the island frequently during that long interval, and more particularly at those periods when many powerful predisposing causes were acting upon the bodies of men calculated to increase their susceptibility of noxious atmospheric impressions. I allude to those times when the island was doomed to suffer severely from famine and siege, and more especially during the last siege, when from September 1799 to the same month of the year following, not less than six hundred persons perished by the vile quality of their food, or by actual starvation *.

* The garrison, on that occasion, were reduced for a considerable period of their sufferings to no better fare than the flesh of horses, asses, mules, cats, and rats; and even this kind of subsistence most difficult to be procured.

SEC. II.

Of a "latent alteration in the state of the air," as a supposed pestiferous cause.

Discovering the insufficiency of the foregoing causes, the advocates for atmospheric production have recourse to what is termed by Sydenham, a "latent and inexplicable alteration or occult influence in the state of the air, infecting the bodies of men," or what he expresses more succinctly, by a "peculiar *constitution* of the atmosphere." Did not so many writers in the present day still insist upon the existence of this occult influence, relying for support on the very imposing authority of this justly celebrated author, I should not have considered it entitled to a serious notice; as the very mention of an occult cause shuts the door against

all kind of reasoning. But to shew with what difficulties the abettors of the hypothesis find themselves beset, even the great Sydenham himself is compelled to make the following acknowledgments :—" Though I have carefully observed the different constitutions of different years, as to the manifest qualities of the air, in order from them to discover the causes of the great dissimilitude of epidemic diseases, (among which he classes the Plague), yet I must own I have hitherto made no progress, having found that years perfectly agreeing as to the manifest temperature of the air have, nevertheless, produced very different tribes of diseases." In the next sentence, this author seems to abandon the latent quality of the air altogether, and to assign a specific and somewhat more intelligible account of its state. " There are various general constitutions of years that owe their origin neither to heat, cold, dryness, nor moisture, but rather depend upon a certain secret and inexplicable alteration *in the bowels of the earth*, whereby

the air becomes impregnated with such kinds of *effluvia*, as subject the human body to particular distempers, so long as that kind of constitution prevails, which, (he adds,) after a certain course of years, declines and gives way to another."—This, however, is nothing more than adducing one gratuitous assumption to explain another. For do we, in point of fact, possess any evidence to determine, that any such alteration takes place in the bowels of the earth? Its author, indeed, acknowledges that it is "a secret and inexplicable alteration," by which he eludes all responsibility for its truth; and we have no right to look for an explanation relative to a point which he is candid enough to allow will not admit of one.

It would be foreign from the object of these pages to enter into any analysis of the reasonings of other writers who have contributed their various, and often very discrepant opinions, on this subject; neither should I have considered it necessary to digress into this notice of Sydenham, but that such pe-

culiar stress appeared to be laid upon the authority and infallibility of so eminent a physician by the learned Chairman of the Contagion Committee; I will, therefore, trespass with only a few farther remarks on the reasonings of that writer, in reference to the subject before us, as they seem to me involved in even greater perplexity than those which have been stated.

"That the air, (he observes,) obtains a secret disposition or temperature productive of different diseases at different times, will be apparent to such as shall only consider that the very same disease in one season proves epidemic and destroys great numbers, and in another seizes but few persons, without proceeding farther, as is manifest in the small-pox, and more particularly in the Plague." Here I may remark, by the way, that in identifying the secret disposition of the air with its temperature, he considers temperature in a totally different sense from its acceptation in the present day, and means, in fact, no more or less that what in other

places, he expresses by the "constitution" of the air. But how Sydenham could feel justified to infer, that because the same disease in one season destroys greater numbers than in another, the air must, as a consequence, acquire a power of producing different diseases at different seasons, I confess I do not comprehend. It may be that I am not so happy as to perceive the force of the author's argument; but as it is given in this passage, it appears to me absolutely unintelligible. Let us shape it in more general terms, and it will stand thus: Since a particular cause is able to produce a more or less extensive effect, it must, *for that reason*, be also capable of producing effects which are dissimilar in their nature. With so manifest a want of connexion between the premises and conclusion, one may be justified, perhaps, in doubting that the author himself could have really meant to express himself so. Moreover, if a particular constitution of the air be "*productive*" of the Plague, it will follow that this constitution possesses an independent

power of generating that disease, or the term productive would be misapplied, which, if I rightly understand its import, can only signify such a power: but in the following passage we shall find that he refuses this power to the air, and at last calls in the agency of contagion to assist in the work of production—" But, besides the constitution of the air, or more general cause, another previous circumstance is required to produce the Plague, *viz.* the receiving the effluvia, or *seminium*, from an infected person, either immediately by contact, or mediately by pestilential matter conveyed from some other place. For when this happens in such a constitution as we have mentioned above, the whole air of that tract of land is quickly infected with the Plague, by means of the breath of the diseased and the steam or vapour arising from the dead bodies, as to render the way of propagating this dreadful disease by infection entirely unnecessary. For though a person should keep cautiously at a distance from the infected, yet the air

received in by breathing will of itself be sufficient to infect him, provided his juices be disposed to receive the infection."

In another place he observes, "that a few persons die of the disease for some years after a great Plague, and it usually goes off by degrees, because the pestilential constitution of the air is not yet entirely changed. Hence that the fevers which prevail for a year or two after a severe Plague are generally pestilential, and though some of them have not the genuine signs of the Plague, yet they are much of the same nature, and require a similar treatment."—During the late Plague of Malta we were without a single evidence of the correctness of this statement. It will not be denied, I believe, that the disease which visited that island in 1813 was justly entitled to be denominated a "*great Plague*," and yet I am justified in asserting, that not one case of a pestilential nature occurred after clean bills of health were issued, either in Malta or Gozo. What reasons existed in the author's mind for the distinction

he makes here between pestilential fevers and those which have not the genuine signs of Plague, I cannot conjecture. A fever must either be characterized by the genuine symptoms of Plague, or it does not deserve to be called pestilential at all. To say then that fever can arise, having symptoms much of the same nature of Plague, and yet which have not the genuine signs of the disease, if it be not a manifest contradiction, is, to say the least of it, not a very clear mode of expression.

In the following passage there seems to be an unqualified recantation of his opinion that the Plague is produced by a particular constitution of the atmosphere. " I much doubt if the disposition of the air, though it be pestilential, is of itself able to produce the Plague, but that always being predominant in some place or other, it is conveyed to others by pestilential matter or the coming of an infected person from some place where the Plague prevails, and that even then it is not epidemic unless the constitution of the

air favors it. Otherwise I cannot conceive how it should happen that in the same climate at the time the Plague rages violently in one town, a neighbouring one should totally escape it, by strictly forbidding all intercourse with the infected place, an instance of which we had some few years ago when the Plague raged with extreme violence in most parts of Italy, and yet the Grand Duke, by his vigilance and prudence, entirely prevented its entering the borders of Tuscany. After these explicit acknowledgments, I believe it will not be necessary for me to proceed farther to prove that it was even Sydenham's opinion that the Plague is strictly a contagious disease. Nor should I have trespassed with so prolix citations from this author, but that besides the reasons already stated, I am willing to shew how toughly he wrestles with his latent atmospheric principle, before admitting the necessity of a contagious one. In fact, he becomes, in place of an opponent to contagion one of its most decided advocates,

and his concessions, as if extorted from his prejudices, are much more convincing than if he had undertaken to argue elaborately in defence of the doctrine which it was obviously his aim to overthrow *.

But that the Plague does not, as contended by Sydenham and many modern writers, extend from the infected subject to any great distance through the air, will be proved by the following fact which, in my judgment, deserves also to be received as one of the most conclusive which, probably, has ever been cited in support of its contagious character; I allude to the escape of the attendants and others engaged with myself in the service of the Military Pest Hos-

* Putting aside the other incongruities in which the above reasoning is involved, we find the author admitting not less than three distinct modes, by which the propagation of the Plague may be effected—first, being produced independently by the latent or secret disposition of the air—secondly, yet requiring the intervention of contact with an infected subject immediately or mediately,—and, thirdly, extending from the infected subject wholly independent of contact through the medium of the air alone.

pital in Malta. The wards of this hospital were of moderate dimensions, (somewhere about sixteen or eighteen feet square,) so that if the effluvia from the bodies of the sick could have rendered the air infectious, it is impossible that these wards could have escaped becoming highly pestiferous. As circumstances noted on the spot come with more force, and are less liable to error than mere general statement upon recollection, I will cite a passage from my communication to the Edinburgh Medical and Surgical Journal, published pending my services in that hospital, concerning the means by which we were preserved, and which will prove that the infection of Plague is not merely innocuous at a very short distance through the air, but may be completely eluded by shunning contact, or by taking proper means to counteract the effect of contact with the subjects of contamination. The passage is as follows: "Of all the means which have come to us recommended either in ancient or modern times, as productive of advantage in com-

passing the safety of persons engaged about the infected, I believe none are entitled to the same confidence as personal cleanliness, avoiding contact, or using immediate ablution after a foul contact, shunning the breath or the vapour exhaling from the bodies of the sick, ventilation, the fumes of the mineral acids, sustaining the animal spirits by generous living, and by exercise, and, lastly, though not less importantly, by the use of oiled silk dresses*, the texture of which is stopped up closely so as to prevent the transmission of any particles of infection (or any material emanation) from the bodies of the sick. During the Plague, which almost a century ago swept

* These dresses were either of oiled silk or canvass. The material is called by the Italians tela cerata, its pores being stopped up by a composition, principally of wax.

The dress consisted of a jacket, which was made to cover the whole upper part of the body, having a hood to fall over the head, but fitting it pretty closely, and with gloves of the same piece attached to the sleeves. A pair of trowsers completed the costume, which were of the same stuff, and long enough to descend to the ancles.

off fifty thousand inhabitants in Marseilles, it was by these means alone, the *mineral fumes excepted*, that the faculty of physicians entirely escaped, though engaged throughout the whole of that calamity in the closest intercourse with the infected. The success of the same means as pointed out by myself* in our Military Pest Hospital fully establishes the value of this practice, not one of the attendants of any description having been attacked with the complaint, though in constant habits of handling contaminated substances, and of coming into contact with the sick." When it is considered that the apartments which the Plague cases occupied were of so moderate dimensions, and that they were filled during the most destructive period of the summer, after the disease had acquired its highest degree of diffusibility, we cannot doubt that some remarkable cause must have existed to confer such a signal protection

* I alluded here more particularly to the before-mentioned defensive dress, and the nitrous fumigation.

from contagion of so virulent a character. Now if we reflect, first, that in those hospitals of the Maltese, where attention to cleanliness and the defence of the body from contact, were *not* rigorously observed, (although all the known means of purifying foul air were diligently practised,) the greater number of attendants were infected: if we reflect, secondly, that in the Military Pest-House, where cleanliness *was* rigorously observed and contact avoided, or counteracted by ablution, the attendants all escaped the disease, it would seem that the infection, if diffusible at all through the air, is so but at a very short distance*, and that, in short, the avoidance of contact is a certain protection against the contagion.

To prove that the same means have been

* Whether inhaling the breath or the vapour emanating immediately from the bodies of the sick, might not be sufficient to communicate the disease, I am not prepared to give a confident opinion, though I should think this would be equivalent to contact, as the minute particles of infectious matter would be so immediately applied to the organs of respiration.

found equally successful on other occasions, the following passage from De Mertens bears satisfactory testimony—"Solo ægrorum et rerum infectarum contactu communicabatur (pestis) atque atmosphæra contagium non spargebat, sed sanissima semper fuit. Visitando tam prope adstabamus illis, ut sola pedis distantia inter nos et eos sæpe vix remaneret et absque alia quacumque cautela quam quod nec corpus neque vestes, aut lectum tangeremus, a peste immunes permanserimus. Linguam propius observando solebam linteum aceto communi imbutum naribus et ori admovere. Many equally authenticated instances are on record.

I am aware, however, that our preservation in the Military Pest Hospital may be ascribed by some to the anti-pestilential power of the nitrous fumes which were diffused through the wards *. But when we consider the

* Oil frictions were likewise employed by some of us, of which I shall have occasion to speak hereafter. See the article Prophylaxis.

complete security conferred by the other means which have been mentioned as successful on occasions equally dangerous as our service in this hospital, and that in the native Maltese Hospitals no advantage whatever was apparently derived from nitrous fumigation, it is evident that this cannot claim to be regarded of itself as any specific or certain defence. Besides, if nitrous fumes were really deserving of being trusted to as a corrective of pestiferous emanations, so invaluable an antidote would undoubtedly have been long since independent of any testimony derived from our experience in any single hospital on any single occasion.

The benefit of the dress which I recommended was, in my judgment, not a little aided by the profuse perspiration which it produced, and which would most probably have carried off any particles of infectious matter that might have come in contact with the skin before there was time for their taking effect.

In my evidence before the Committee I

find I have attached greater virtues to this dress than were actually meant. For, although it seems an excellent mode of excluding pestiferous matter from the skin, and for preventing it being absorbed, I doubt that it would have proved so complete a protection, had not the other means of cleanliness been used at the same time *.

SEC. III.

Of marsh miasmata, considered as the source of pestiferous atmosphere.

Among the various causes fancied to occasion the Plague, none have ever been insisted upon with more confidence than *marsh miasmata*, but I persuade myself a few remarks will be sufficient to exhibit the fallacy of this hypothesis, when applied to account for the late Plague of Malta.

* Almost the whole of the forzati, or convicts perished, though clad in this dress, during the execution of their duties of carrying out the sick, the dying, and the dead, from their houses.

To make out a case proving the existence of a pestiferous quality in marsh miasmata, two things are necessary—first, that the Plague be observed to be primarily produced and chiefly prevalent in the vicinity of marshy ground,—and, secondly, that it cannot reach the inhabitants in situations which are excluded from the influence of these effluvia. In the foregoing detail the reverse of this is apparent, and we have seen that Casal Paola*, though situated on the edge of wet ground called the *marsa*, where agues were wont to be both frequent and fatal, was one of the latest and most slightly infected villages in Malta, not having been contaminated until the 25th of July, nearly three months and a fortnight after that of Valetta. It has already been observed, that the same good fortune attended those who resided in the neighbourhood of the marsh of Messida, though having in its vicinity a populous town called the Pieta,

* This town was, at one time, found to be so unhealthy, that a great part of it was deserted by its inhabitants.

which was separated from Valetta and Floriana by a small estuary of Marsamuchet Harbour. Yet the neighbourhood of Messida was not infected for thirteen weeks after the Plague reached Valetta.—Lastly, the marsh of Puales produced a few agues this year, but no case of Plague was discoverable any where in its neighbourhood.—To bring proofs to shew that the infection did not reach the inhabitants in situations which were excluded from the influence of marshy exhalations, would be only to recapitulate a great part of the matter contained in the foregoing pages.

Against these remarks, it may be argued that the causes which produce marsh effluvia exist in apparently some of the driest and most elevated situations, nothing more being necessary to the evolution of this gas than vegetable matters acted upon by heat and moisture; and a writer*, for whose talents I have a high respect, has stated that these

* Dr. Bancroft.

agents may account for the production of the fatal epidemic fevers on the rock of Gibraltar. Yet admitting that pestiferous effluvia may be thus evolved, it still remains to be shown why those places in the vicinity of marshy or moist ground, were not the *most* severely visited by Plague, as well as the *earliest* scenes of its desolation. There is likewise reason to presume that the disorder would commence at a season when marsh fevers are most usually prevalent, or if at a different season, at least under some peculiarities in its state, discoverable by the senses. But in Malta it began when such fevers are hardly ever known in the island, and under circumstances the least of all favorable to any idea of deterioration in point of its soil or climate. Had it been otherwise, it is unaccountable that the Maltese, in their extreme anxiety to ascertain the cause of their disasters, should not have been able to fix upon some pretext in the state of the weather, or deviation from the ordinary course of the seasons, to bear out at least a *plausible*

conjecture to account for their misfortunes.

Neither is it reconcilable with the character of its marshy origin, that all foreigners from a cooler climate should have been *less* the victims of pestilence than the natives themselves. In the West Indies and other warm latitudes, where marsh fevers are peculiarly destructive, strangers from temperate climates suffer always *more readily* and with greater severity than the natives do, or than persons who, though not natives, have been some years resident in those countries; a fact which has given rise to the common notion that a *seasoning* is necessary to protect a foreign constitution from the influence of such climates. But in Malta the natives of a cooler climate were almost all fortunate in escaping the contagion, especially our own countrymen.

If Plague be the product of either soil or climate, it is mere trifling with common sense to allege that Malta could be free from pestilential visitation for a century and half; and

before so great progress was made in the arts conducive to health and comfort, it appears impossible that marsh effluvia must not have been even more liable to produce noxious effects upon the human frame, than since the condition of the country and its inhabitants in every respect has been so much improved; to which I may add, that at no period was Malta ever known to have been in a more flourishing state, or in the enjoyment of a higher degree of health and comforts of every description, throughout all classes, than just anterior to the Plague of 1813.

In Sicily the diseases arising from malaria, (which is only another name for marsh effluvia), are every year both frequent and destructive, and if this could give birth to the Plague, it is quite unaccountable that that Island should escape being often the scene of pestilential ravages, more especially as the frequency of earthquakes could not but occasion the disengagement of every noxious impregnation and combination which the advocates for the atmospheric doctrine

so much insist upon as occasioning a pestilential constitution of the air.

It has been advanced by some writers, that as Plague is only a higher degree of marsh fever, common agues do not make their appearance at the same time. But in Malta several cases of ague occurred as above noticed in the vicinity of marshy grounds, first appearing in June *, and continuing to occur until September.

Of the co-existence of Plague and marsh fevers we have numberless proofs in every country, and Dr. Sims, in his report of the epidemics of the last two centuries, states, that whilst the Plague raged in the South of Europe, agues and putrid fevers were very common.

The following table, comprising a diary of the heat of each day, with its corresponding mortality by Plague, will point out the error of ascribing the disappearance or fluctuations

* Here it appears that in my evidence before the Committee, I was mistaken in confining the agues of this year to the autumnal months.

of the malady to any changes in the temperature of the atmosphere. This register commences from the first day the disease was officially reported as infecting Valetta.

A. D. 1813 Day of the Month.		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
April	16	8 o'clock	61	2 o'clock	64	
	17	8	63	2	65	
	18	8 } 10 }	60 64	5	60	
	19	7	55	9	57	1
	20	7 } 10 }	50 65			
	21	8	59	2	60	
	22	7	58	8	60	
	23	8	60	4	66	
	24	6	60	2	71	
	25	8 } 11 }	63 67			
	26	9	64	3	65	
	27	8	64	4	67	
	28					
	29	7	65	5	70	
	30	7 } 10 }	64 65			
May	1	7	64	4	71	
	2	8 } 12 }	60 72	10	65	
	3	7	64	8	64	2
	4	7	63	4 } 8 }	69 64	
	5	8	64			
	6	7	67			1
	7	6	64	10	62	
	8	8 } 12 }	67 72			
	9	8 } 4 }	67 75			1
	10	8	72	4	74	
	11	7	69	3	75	

A. D. 1813. Day of the Month.		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
May	12	6 o'clock	65			1
	13	7 } 12 }	68 75	6 o'clock	70	
	14	5	65	1 } 10 }	78 67	
	15	6	65	4	77	
	16	6	69	3	79	3
	17	5	64	4	78	
	18	6	64	4	74	2
	19	8	71	3	77	8
	20	7	69	6	70	10
	21	6	64			6
	22	6	65			6
	23	8	70	6 } 12 }	76 77	4
	24	8	72	3	80	7
	25	6	64	4	76	4
	26	8	71	1½ } 5 }	75 71	5
	27	6	65	4	76	5
	28	6	67			7
	29	8	74			16
	30	8 } 12 }	75 80			10
	31	6	71	4	82	12
June	1	6	71	3	84	18
	2	8	70	4	78	8
	3	9	72	3	77	13
	4	6	71	3	82	19
	5	6	70	2	78	16
	6	6 } 12 }	70 80			24
	7	8	75	4	76	19
	8	6½	73	4	76	28

A. D. 1813. Day of the Month.		Temperature, P. M.		Temperature, A. M.		No. of Deaths
June	9	8 o'clock	74	5½ o'clock	73	24
	10	6	71	5	77	32
	11	6 11	73 78	6		27
	12	6	72	1½	78	33
	13	8	75	1 2	79 80	33
	14	6 10	71 78	4	76	36
	15	6 10	71 79	1	82	19
	16	6 9	70 76	4	80	19
	17	10	79	5 8	77 71	23
	18	7½	71	4	76	28
	19	6	71	1	74	21
	20	10	76	2	79	18
	21	8	71	1	77	24
	22	6 8	69 72	2	79	32
	23	8	74	5	73	29
	24	6 12	72 75	4	79	35
	25	7½	74	3	78	23
	26	6	71	4	70	34
	27	8	74	1 3	84 80	39
	28			3	80	37
	29	6 10	72 77	1	82	44
	30	6	69			47
July	1	6 12	70 83	3	85	53
	2	8	77	2 5 8	86 83 79	42

A. D. 1813. Day of the Month.		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
July	3	9 } o'clock 10 }	85 87	2 o'clock	88	44
	4	9	80	1 } 2 }	85 81	53
	5	6	76	4	80	43
	6	6	71	4	80	49
	7	10	77	1	78	58
	8	8	77	3	78	55
	9	8	77	2	80	51
	10	11	81½	3	83	52
	11	10	79	2	81	56
	12	8	78	3 } 6 }	78 75	63
	13	6 } 9 }	72 76			59
	14	6 } 9 }	73 77	3	78	55
	15	12	80			65
	16	6 } 10 }	77 81½	4	81	67
	17	6 9 12 }	77 83 Do.	1 } 5 }	82 83	36
	18	6 } 7 }	76 78	1 } 2 }	81 82	50
	19	6 } 10 }	76 78	4	79	41
	20	8	75	3 } 8 }	80 78	43
	21	8	80	1	80	41
	22	6 } 9 }	76 78	2 } 5 }	80 79	55
	23	8	78	1 } 9 }	80 78	48
	24	6 } 12 }	77 85	2	83	45
	25	8	79			44

A. D. 1813. Day of the Month.	Temperature, A. M.		Temperature, P. M.		No. of Deaths.
July 26	12 o'clock	80	3 o'clock	81	53
27	6	75	2 4	82 79	46
28	8 12	79 82	3	84	64
29	6 10	80 83	2	82	49
30	6 9 12	76 81 Do.	2	81	53
31	8	81½	5	80½	63
August 1	9 12	81 82	2	81	58
2	6 12	74 82	2	81	50
3	6 8 10	79 81½ 83	2	84	48
4	6 11	74 84	3	83	27
5	4 9 11	76 83 84	2	82	47
6	6½ 7 10 & 12	78 81 83			43
7	8 11	82 85	2 4	85½ 84	35
8	6 8	75 80	1	83	37
9	8 10	80 81	3	81	24
10	6 9	75 83	4	81	26

A. D. 1813. Day of the Month	Temperature, A. M.		Temperature, P. M.		No. of Deaths.
August 11	6 o'clock	75			28
	9	75			
	12	76			
12	5	71	3 o'clock	80	26
	8	77			
	12	81			
13	6	75	2	81	31
14	6	75	2	82	31
	9	80½			
15	6	75	4	81	29
	9	79			
	12	80			
16	5	72	3	80	34
	9	78			
17	5	72	3	78	29
	9	79			
18	6	74	4	97	32
	9	78			
	12	80			
19	6	73	2	80	38
	10	78			
20	9	79	3	80	27
	12	80			
21	8	78	2	84	32
	10	80½			
	12	82	1	86	32
22	9	81	3	84	
23	6	76	2	84	34
	12	83			
24	6½	77	2	81	33
	9	81			
25	5	70	3	79	34
	8	76			
26	5	68	3	81	31
	9	78			

A. D. 1813. Day of the Month	Temperature, A. M.		Temperature, P. M.		No. of Deaths.
August 27	8 o'clock	78	3 o'clock	79	38
	11	81			
28	6	76			
	9	79½	2	81	27
29	6	77			
	9	79	2	80	25
30	6	73			
	9	79			29
31	6	74			
	9	77	2	79	28
Sept. 1	6	74			
	10	78	4	76	26
2	7	72			
	10	77	1	78	37
3	6	71			
	9	76	2	80	33
4			3	81	32
5	6½	75	2	81	28
	10	80			
6	7	73	3	79	33
	10	79			
7	7	74	2	81	34
8	6	72			
	10	80	2	81	37
9			5	79	31
10	7	73	5	72	29
	11	75			
11	5	72	2	75	
			4	74	25
12	7	71			17
13	7	70	3	74	26
14	7	66	1	77	17
15	6	66	1	76½	17
			3	78	

A. D. 1813. Day of the Month.		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
Sept.	16	6 o'clock	65½	1 o'clock	76	30
	17	6	68	2	78	23
	18	6 } 10 }	66 79	1	80	12
	19	7	70	1	76	20
	20	6	66	2	78	24
	21			2	78	21
	22	6	70			12
	23	7	74	4	78	12
	24	6 } 11 }	74 77	3	75	16
	25	10	77	2	76	11
	26	7 } 12 }	75 79½	4½	77	11
	27	7	75	2	77	19
	28	7	74	1	79	12
	29	7 } 10 }	75 79	2 4	79½ 77	15
	30	10	82	1 } 2 }	83 83	14
Oct.	1	6½ 10	76 82	1 } 4 }	83 83	16
	2	7 } 10 }	79 80	2 } 3 } 5 }	78 75 75	12
	3	8	78	1 } 4 }	80 76	16
	4	8	71	1 } 4 }	75 73	16
	5			2	78	7
	6	10	76	3	79	6
	7	10	76			14
	8	7½ } 11 }	69 78	4	76	13

A. D. 1813. Day of the Month.		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
Oct.	9	6½ o'clock	73	1 o'clock	78	9
		10	76	4	75	
	10	11	76	3	78	8
	11	6	70	3	77	5
	12	6	70			3
		12	78			
	13	6	69⅞	2	75	5
		10	75			
	14	10	74	3	76	4
	15	7	69	2	77	3
	16	7	70	2	78	5
		9	76			
	17	6	66	1	72	5
		11	69	4	79	
	18	8	70	1	74	5
				4	74	
		6½	67			
	19	10	74			4
		12	74			
	20	7	71	2	73	7
	21	9	74	2	75⅞	10
		12	75			
	22	7	72	3	77	2
	23	8	75	2	79	4
		12	78			
	24	8	74			7
		12	77			
	25	7	74	2	80	6
		11	79	4	77	
	26	7	67	2	78	2
	27	7½	75	1	79	3
	28	7	72	3	77	5
		11	75			
	29	7	70	3	73	1
	30	7½	65	1	70	5
				4	67	

A. D. 1813. Day of the Month.	Temperature, P. M.		Temperature, A. M.		No. of Deaths
Oct. 31	8 } o'clock 12 }	62 62	3 o'clock	61	3
Nov. 1	8 } 12 }	62 63	2 } 5 }	63 61	1
2	7	63	4	64	1
3	7	63	2 } 5 }	71 69	3
4	8 } 10 }	66 68	3	71	2
5	8 } 11 }	69 71½	1 } 3½ }	67 68	3
6	7 } 12 }	61 70	3	67	3
7	7 } 11 }	60 66	1 } 3 }	79 68	1
8	7	66	3	69	3
9	7	59	1 3	69 67	1
10	6 } 12 }	59 63			2
11	7	58	1	70	1
12	7	58½	4	70	2
13	8	60	3	69	2
14	7 } 12 }	60 71	2	72	2
15	7½	69	4	72	1
16	7 } 11 }	63 66	3	64	1
17	7	59	1	64	
18					4
19	7	62	1	64	2
20	8	62	3	63½	2
21	7	62	1	63	1
22	8	64	2	65	2
23	7	63			1
24	6 } 9 }	62 67	2	70	2

A. D. 1813. Day of the Month		Temperature, A. M.		Temperature, P. M.		No. of Deaths.
Nov.	25	8 o'clock	66	2 o'clock	69	1
	26	8	67	3	70	4
	27	8	67	1	71	1
	28	9	68			1
	29	8	62	2	67	
	30	8	64	4	62	
Dec.	1	8	57	4	64	
	2	9	65	3	59	
	3	8	64	3	68	
	4	7	62	2	68	
	5	8	59	2	62	
	6	7	53	2	64	
	7	8	64	1	70	
	8	7	67			
	9	7	66	2 } 3 }	65 63	
	10	7½	58	8	57	
	11	8	57	1	61	
	12	8	56	1 } 5 }	63 60	
	13	8	59	2 } 8 }	60 67	
	14	8 } 12 }	59 63			
	15					
	16					
	17	8	58	3	62	
	18	8	56	3	59	
	19					
	20	8	62			
	21	8	56	3	59	
	22	8	57	3	60	
	23	8	54	4	62	
	24	8	56	4	55	

A. D. 1813. Day of the Month.	Temperature, A. M.		Temperature, P. M.		No. of Deaths
Dec. 25	8 o'clock	54	1 } o'clock 3 }	58 58	
26	9	58	1 } 2 }	60 59	
27	8	59	3	61	
28	8	54½	2 } 4 }	56 54	
29	7½ } 10 }	52 53			
30	8	46			
31	8	49	3	54	

The whole amount of deaths in Malta to the end of November, was four thousand four hundred and eighty-six, after which the disease being chiefly confined to the Pest Hospitals, I could not obtain a return of the mortality. I continue the register, notwithstanding, as it may be satisfactory to some readers to see the variations of the thermometer carried up to the end of the year of the Plague *.

* The reader is presented below with a Diary of the atmospheric variations during the greater part of April, in the year antecedent to the Plague, in order that by comparison with the foregoing Table, he may judge for himself how far there

An inspection of the foregoing Table, clearly shews that the decline of the malady

were grounds for believing in the existence of any thing out of common course in the temperature or vicissitudes of the April of the Plague year, which could account for its being more than usually unhealthy. Various interruptions prevented my carrying down the Diary farther than the 6th of May.

Some allowance will require to be made for the observations being taken at noon. In the preceding Register they have been made either much earlier, or else generally at two or three o'clock in the afternoon, when the heat had attained its maximum.

1812.	Temperature at Noon.	1812.	Temperature at Noon.
		April 19	68
		20	67½
		21	67
April 4	64	22	66
5	63½	23	66
6	64	24	65
7	63	25	66
8	62½	26	66
9	62½	27	65
10	62½	28	66
11	63	29	67
12	63	30	67
13	62½	May 1	68½
14	62	2	68
15		3	68½
16	64	4	68½
17	65	5	69
18	66	6	69

had no connexion whatever with the variations of the atmospheric heat: and I need hardly remark, that had the cause resided in any respect in the state of the air, we might as well have expected to chain the winds as to restrain the spread of the disorder by the measures which were found so successful.

By comparing the thermometrical indications of the month of April in each of the years 1812 and 1813, it will be seen that the April of the latter year was decidedly colder than that of the preceding: the winds were northerly in both, and occasionally boisterous. The months of January, February, and March, immediately anterior to the Plague, were all cold months, and it was the universal opinion, that the March and April of 1813 were colder than in most former years. If all this be true, there is the less reason to presume that the Plague was the product of the atmosphere in that year, since cold is generally admitted to be

not only adverse to its production, but incompatible with its existence.

I find, in my evidence before the Committee, that I did admit some inconsiderable increase in the heat of the air whilst the disease went on to decline. On a more minute review of the Table, it appears this admission has been made against the fact without sufficient grounds; for example, although after the imposition of more rigid restrictions the deaths decreased very considerably in the course of the last fifteen days of July, the average heat of the weather was not greater or less than during the first fifteen days of that month. Neither was there above one degree of sensible variation in the mean heat of the weather for the first sixteen days of August, during which period the disease yielded so very rapidly; so that, in short, the average temperature from the 1st of July until the 16th of August, comprising the whole period of its greatest increase, as well as decadency, may be regarded as equal. I have computed the

mean heat by casting up the highest indications of the thermometer on each day.

It will be remarked, that on certain days about the latter end of June and the beginning of July, when the thermometer rose suddenly to a height which it never afterwards attained, the deaths were greatly augmented: on other days, when the heat as rapidly subsided, the very same result followed. Moreover, whilst the temperature remained equal on different days, the mortality varied in an extraordinary degree, *e. g.* it amounted to only twelve deaths on the 31st of May—on the 15th of June, to nineteen—on the 29th of June, to forty-four—on the 16th of July, to sixty-seven—and on the 18th of July, to fifty, the thermometer on each of those days indicating about 82°. Again, although the extent of mortality remained equal, the changes of temperature were not less striking, *e. g.* on the 13th and 26th of June, we find a difference of ten degrees, and on the 12th, 28th, and 31st of July there are also

remarkable variations in the thermometer, so that whether the mortality continued equal, the temperature was very different, or whether the temperature remained equal, the mortality was not less inconstant. It would be a nugatory undertaking to pursue such remarks farther, every day's observation affording the clearest grounds to conclude that the fluctuations of the mortality bore no reference whatever to the changes of the atmosphere in point of heat.

I am aware it is a general opinion that a considerable degree either of heat or cold is incompatible with the existence of the Plague. We had, however, no opportunity of seeing this exemplified in Malta, as the contagion was arrested in several places before the least approach to any *sensible*, not to speak of *considerable* change in the temperature of the air was perceptible. It is particularly deserving of remark that the thermometer stood at about seventy-six or seventy-seven when the last case was announced in Valetta, which was a degree of

heat equal to that in which the contagion made its most rapid strides at an earlier period in this city.

A numerous host of proofs to shew that the decrease of the disorder was wholly independent of the state of the atmosphere as to temperature, is derived from its arrestation in several of the casals by restrictive regulations during the period of its widest dissemination in other places. It was, for example, exterminated in casal Lia early in June — casals Atard — Gudia — Zeitun — Tarxien, Micabiba and Zurich, in July, and in Zabbar, Luca, and Paola in the month of August. It was also stopped in Cospicua, a populous town within the fortifications in July, and in Vittoriosa, another of the same description, in August. The following extract from the Government Journal of Malta supplies definitive confirmation of all that has been advanced in reference to this subject.—" All' apparir di questa infermita fummo assicurati che il caldo la estingueva, che il decrescir della luna ne sminuiva la

forza, che le ruggiade della notte la spegnevano, e che alcuni particolari giorni d'estate la faceano tutto in un colpo svanire. Pero tutte queste cose che si verificarono in Alessandria, in Smirna ed in Aleppo *non furono quasi di alcun effetto in Malta ;* ne il caldo la estinse, ne il decrescer della luna porto alcun sensibile giovamento, ne il venir di alcuni giorni particolari la fece svanire." Finally ; when to the whole of this body of facts we add the rapid diminution in the number of attacks following almost immediately upon the rigid enforcement of Police restrictions in the several towns formerly mentioned, and at a period when the contagion had attained to its acme of diffusibility, no doubt, I think, can remain in any mind which is open to conviction, that it was to these measures alone the sudden cessation of the disease in those places was immediately to be attributed, and not to any alteration in the atmospheric influence.

I regret much it did not occur to me to keep a hygrometrical diary, during my re-

sidence in Malta, together with a register of the prevailing winds. But I am satisfied there was nothing in the state of the weather deserving especial notice in the year of the Plague, with the exception formerly noticed, that the summer months in general were cooler, and, perhaps, more windy than in the year preceding.

A notion prevailed among the Maltese, that whenever the wind increased, no matter from what point of the compass, it became very generally followed by a corresponding increase in the number of attacks, and, on the contrary, that serene weather, though of an equal temperature, was succeeded by a diminution in their number. Some attempted to account for this by supposing that the perspiration being rendered more profuse in calm weather was less favourable to the absorption of the pestilential matter by the skin; an exemption which, I may remark, by the way, could not have existed if the infection were received through the medium of the air by the lungs. It is, however, probable, that the coincidence was merely accidental.

Two objections have been urged by those who deny that the dissemination of the disease was ascribable to contagion; the first, that it must have been found to assail the different towns in the order of their proximity to each other, and the second (which is only a different mode of stating the first objection,) namely, that the disease would necessarily have assailed individuals more rapidly in succession, and not in the irregular manner in which it extended throughout the inhabitants of Valetta. A moment's reflection will exhibit the insufficiency of these objections: For whilst the intercourse between the towns was unrestrained for a length of time, there manifestly was nothing to forbid that an infected person or infected materials should as readily transport the disease at once into a more remote town as into one more contiguous, without coming in contact with any person on the intermediate line of their route, and accordingly we find the casals infected in the very irregular order following:

			From Valetta.
Gudia	on the 18th	of May	3 miles
Rabato	20		6
Atard	22		3½
Curmi	do		2
Luca	23		2½
Zeitun	24		2½
Zebbug	26		4
Bircarcara	28		2
Zabbar	31		1½
Micabiba	1	June	4
Chercop	4		3½
Lia	6		3¾
Zurich	17		4½
Musta	8	July	4½
Tarxien	21		2 nearly
Paola	25		¾
Siggeui in September			4½
Dingkli in October			8

That the infection did not spread in Valetta more regularly from each individual to his neighbour, or from one house to the next in its vicinity, is of course equally accounted for, as in respect to the contamination of the casals. We have no right, however, from this apparent irregularity, to assume that the contagion did not extend with every exactness to those who were either immediately or mediately in contact with the infected; but on the contrary, we have had the best reasons de-

rived from its progress for several weeks after its commencement in Valetta, to conclude that it does always so extend, without deviation. That the disease was not more *rapidly* diffused at the first may be explained by the state of the air, and other circumstances not favoring its contagious power in so great a degree as afterwards, and because under any circumstances, contagion is (most fortunately) not governed by a necessity of exerting its influence upon all individuals alike who come in contact with the subjects of contamination. This would be contrary to experience, not only in regard to the Plague, but to every other disease which is admitted to own its propagation to this cause. We do not, in fact, know in any contagious disease what it is that constitutes the susceptibility of the human subject, in order to ascertain under what conditions the contagion must, *of necessity*, be propagated; for, to use the words of Cullen, "some of the most powerful contagions do not operate but when the bodies of men exposed to them are, in certain cir-

cumstances, which render them more liable to be affected by it, or when certain causes concur to excite the power of it, and, therefore, by avoiding these circumstances and causes, they may often escape infection."

To constitute an effectively pestiferous contact, many concurrences, of which, in the present state of our knowledge we are entirely ignorant, may be indispensable. For example, it may be requisite that a certain state of the air as to heat and moisture, should co-operate with a peculiar condition of the skin; that the contact should take place at a particular period of the disease, and be continued for a due length of time; that the constitution of the individual exposed to the infection should be united with a certain temperament; that he be exempt from certain diseases; that the cuticle in contact with the poison should be in a peculiar state to fit it for absorption; in short, so many such circumstances meeting at the same instant, may be required to render pestilential virus operative, that if they were

all known to us, we might rather be surprised that the visitation of countries by pestilence is so frequent an event as we find it, in place of considering their long escape as an argument for doubting the reality of its importation.

In chemistry we have certain knowledge of the nicety required to produce results when only one or two agents are concerned.

It is scarcely possible, even when we bring a saline solution to the same state of concentration, to obtain, by its cooling, crystals of precisely the same magnitude and form. We find the whole process influenced by the rate of cooling, the quantity of liquid, the size and shape of the vessel, the materials even of which it is composed, the degree of exposure to the air, and apparently, also, by peculiarities of the atmosphere, incapable of being detected with precision—such as its electric state, or its hydrometric condition. The addition of the smallest portion of another salt to the one which has been dissolved, will modify, en-

tirely, its form, and even its more important internal crystalline structure. And hence, from such causes in Nature more particularly, where every thing is conducted on a larger scale, a substance essentially the same by all chemical tests, is found often under the greatest diversity of crystalline forms.

The communication and diffusion of heat might afford similar illustrations. For example, it is from this cause difficult to bring the same liquid to boil at the same temperature precisely, in two vessels of the same size and shape, but of different materials. A compound gas transmitted through a metallic tube, placed across a furnace, will suffer a different kind of decomposition to that which the same gas will suffer from being transmitted through an earthenware tube, under precisely the same circumstances, though the metal produce no effect by any chemical affinity.

The mere scratching of the surface of a vessel will modify the rate of its heating or cooling. And if we cover its surface with

successive pellicles of any substance that can be closely applied to it, we not only modify its rate of cooling, but do so under very different proportions, according to the number of pellicles we add.

The expansion of a metal is not merely dependent upon its chemical purity, but on very slight changes of aggregation; so that from two fragments of the same bar, one hammered, the other not, we shall obtain different degrees of expansion from the communication of precisely the same increment of temperature.

The cases of chemical affinities would supply endless illustrations. Even in the most common practical operations an uniformity of circumstances is requisite to obtain the same product from the mutual action of the same substances in the same relative quantities.—The order in which they are presented to each other—the degree of dilution in which they exist—the agitation communicated—the state of temperature—certain periods of time—all these circumstances,

in short, produce variations of the utmost importance. I may give merely one example (a striking one), of the necessity of peculiar arrangements to effect combinations, and those even of no complicated nature. It may be taken from the formation of a triple salt, which has lately been the subject of investigation, and is one of importance, as being, probably, an ingredient in the Cheltenham waters and other saline mineral springs, namely, the triple sulphat of magnesia and soda *. It consists of sulphat of magnesia, 32 —sulphat of soda, 39—and water of crystallization, 28 or 29. The most obvious method of forming this salt would be to dissolve the two sulphats in the above proportion in water, and evaporate the solution to crystalization, and scarcely any chemist would hesitate *a priori* to conclude, that in this way it could be obtained. In this way, however, it cannot be formed. The two salts crystallize apart, and it requires indirect

* Vide Edinburgh Philosophical Transactions, vol. vii.

methods to effect their union, and thus to establish an affinity apparently even of the simplest kind. In the excitation of galvanic action nothing is more difficult than to obtain uniformly equal effects even from the action of the same liquid applied to the same number of metallic plates; and the chemical actions of these forces or bodies, are so powerfully modified by slight causes, that while water, perfectly pure, will be decomposed with the greatest slowness at the respective poles, the addition of the most minute portion of saline matter will cause it to be decomposed with great rapidity. The excitation of electricity, it is well known, is equally dependent on slight variations of circumstances, so that the management of the electrical apparatus always requires a considerable exertion of care and skill.

In the operation of agents on the human body, either chemical, or partly chemical, and partly physiological, there is not less diversity in the results. The galvanic shock is received in very different degrees of intensity

from the same battery by different individuals. There are certain effects produced by the gases on the animal system by inspiration, which are liable to be varied considerably in degree, and even in kind of action, not only in different species of animals, but in different individuals of the same species. To recur to one striking example, and a familiar one—the effects of the nitrous oxyd, though usually highly exciting, are still, in every case, perhaps, peculiar, and strikingly so in every individual, and even in the same individual at different times. In a state of vigor, for instance, or of lassitude, the same quantity inspired will produce the greatest difference in the effect. The powerful debilitating agency of carburretted hydrogen has been found to be very unequal on different animals; and it has also been affirmed that it becomes less powerful after the inspiration of the gas has been long and repeatedly continued.

To bring illustrations more immediately connected with the subject. It is well

known by those who have experience in cow-pox, that a peculiar rough state of the cuticle, consisting in its elevation at the roots of the hairs, and which is very common in the healthiest subjects, will completely prevent the vaccine matter from taking effect; and in like manner, that the presence of some cutaneous diseases do for a time fortify the constitution against others. We every day observe the greatest uncertainty in the susceptibility of certain individuals of the effects of poisonous and narcotic substances, and that these substances act upon the same individual totally in a different way at different times. Opium, in the same dose, will, at one time produce deep sleep, at another watchfulness, and wine is not less capricious. Henbane will not act at all on some habits as a sedative, but produces purgation. Many escape syphilis for a great period of their lives, but at another become extremely susceptible; and even the bite of a rabid animal is innocuous to certain constitutions, though in others the mere application of the virus to

the surface is almost immediately followed by all its frightful symptoms. May we not conclude then that the pestilential poison may be equally capricious in its action as any of these, depending upon causes, and governed by laws peculiar to itself.

The many instances which occurred during the Plague of whole families escaping the contamination after having lived long in the most intimate communication with the infected, proves to what a great extent non-susceptibility may exist. Several cases were known to me of individuals, labouring under the greatest violence of the disorder, being taken from the very bosom of their families, without communicating to them any injury —children from their parents — and husbands from their wives. Yet these families had used no kind of precaution whatever; indeed, in most instances, not so much as an attention to common cleanliness. In De Rolle's regiment cases were taken from the very heart of a company, so urgent as to prove fatal in a day or two, whilst the rest of

the men continued in perfect health; neither was there here any assignable cause to which their escape could be attributable —oil-frictions—fumigations—or any other kind of precaution, preventive, or antidote. My own calesse-man and two of his children died of Plague, but his wife was never infected, nor his brother-in-law, though constantly attending on the family in their illness. These people were also very neglectful of personal cleanliness, and used no kind of precautions whatever.

As an objection to contagion, it has been advanced that the Plague arises and disappears at *certain determinate periods of the year*, independently altogether of any interference on the part of the police; an assertion which, however, is unsupported by fact, as the disease is known to commence in the same country under every diversity as to the seasons; in proof of which we need go no farther than the last two Plagues of Malta, the former having commenced in the month of December, three months previous to the time of its appearance in 1813.

Another objection taken against contagion in Plague proceeds from the idea that if the disease could be capable of infecting persons twice, the human race must long ago have been exterminated. But before this inference can be admitted, it will be incumbent on its supporters to explain why the same consequence has not resulted from other * contagious disorders, as well as the Plague. The fact is, that in all diseases of this character, those who have suffered once are generally less liable to a recurrence of attack; and in typhus fever, whether we consider it contagious or not, instances of second attacks are far from being frequent.

It will not be denied, however, that many objections and difficulties may be thrown in the way of the doctrine I have been endea-

* The occurrence of small-pox a second time in the same individual, however it may be doubted or disbelieved by some, is fully established by the most respectable authorities. The instances, it will be allowed, are rare, but the recurrence of a milder variolous eruption after small pox is by no means so unfrequent an event; and in the Plague, likewise, the succeeding attacks are usually milder than those which precede them.

vouring to support, which may baffle every attempt to explain. But were it allowable to discredit the validity of any doctrine merely because it is possible to advance objections of an unanswerable kind, the same argument would equally authorize the rejection of many of the most important and practically useful deductions in natural science. I am willing, however, to flatter myself that the contagious character of the Plague has been made out in the foregoing chapters as decisively as can be nccessary to remove the doubts of any earnest enquirer; not merely by circumstantial evidence, but by direct proofs and a series of converging facts not to be reconciled on any other principle without many very glaring violations of probability. Such evidence will, therefore, be entitled to govern our practice until some clearer light shall be set up to shew us our delusion *: and I need

* If it be a delusion to believe the Plague contagious, we must allow that it is one which has prevailed from the earliest times, under sanction of the highest authorities; and, notwithstanding all that has of late been said to the contrary, there

not add, that the proofs ought indeed to carry much weight which are urged on the

is positive evidence, if any meaning is to be attached to words, that some of the greatest Physicians, Poets, and Historians of antiquity, were as thoroughly convinced of the existence of contagion as a property belonging to the Plague and other diseases, as we are assured of the fact by our experience at the present day; in proof of which, I believe the following passages out of numerous others, are more than sufficient for every purpose of satisfying any reasonable mind. I offer them without commentary, as they seem to me altogether independent of any such aid.

Διὰ τὶ ἀπὸ μὲν νόσων ἐνίων νοσοῦσιν οἱ πλησιάζοντες ἀπὸ δὲ ὑγιείας οὐδεὶς ὑγιάζεται; ARISTOT. PROB

Δέος δε ξυμβιῶν τε, καὶ συνδιαιτᾶσθαι, ὃ μεῖον ἡ λοιμῶ, ἀναπνοῆς γὰρ ἐς μετάδοσιν ῥηϊδίη Βαφη ARETÆUS.

συνδιατρίβειν τοῖς λοιμώττουσιν ἐπισφαλές, ἀπολαῦσαι γὰρ κίνδυνος ὥσπερ ψώρας τινὸς ἢ ὀφθαλμίας. GALEN.

Διά τί ποτε ὁ λοιμὸς μόνη τῶν νόσων μάλιστα τοὺς πλησιάζοντας τοῖς θεραπευμένοις προσαναπίμπλησι. ARISTOT.

ἕτερος ἀφ' ἑτέρου, θεραπείας ἀναπιμπλάμενοι, ὥσπερ τὰ πρόβατα ἐθνησκον· καὶ τὴν πλέσον φθόρον ἶσο ἐνεποίει· εἴτε γὰρ μὴ θέλοιεν δεδιότες ἀλλήλοις προσίεναι, ἀπώλλυντο ἔρημοι, καὶ οἰκιαι πολλαὶ ἐκενώθησαν ἀπορίᾳ τοῦ θεραπεύσαντος· εἴτε προσίοιεν διεφθείροντο, καὶ μάλιστα οἱ ἀρετῆς τι μεταποιέμενοι. THUCIDIDES.

Τοιόσδε ἔν ἐόντας τίς ἐκ ἂν φύγοι, ἢ τίς ἐκ ἂν ἐκτραπείη, κ᾽ἠν υἱὲς, ἢ πατὴς ἔῃ, κἠν κασίγνητος τύχῃ; δέος καὶ ἀμφὶ μεταδόσιος τῶ κακω. ARETÆUS.

opposite side of the question, before any departure from the usage of nations, in re-

Quo propior quisque est, servitque fidelius ægro
In partem lethi citius venit. OVID.

Postea curatio ipsa vulgabat morbos. LIV.

Vulgatique *contactu* in homines morbi. Ibid.

Pusula nisi compescitur intra primam pecudem, universum gregem contagione prosternit. COLUMEL.

———Nullo cessabant tempore apisci
Ex aliis alios avidi contagia morbi.
Qui fuerant autem præsto, contagibus ibant. OVID

Quidam ex Asia, lichenarum contagione importavit. PLIN.

Vereor ne hoc quod infectum est, serpat longius.
CIC. ad ATTIC.

Contagium morbi etiam in alios vulgatum est. CURT.

———————————Priusquam
Dira per incautum serpant contagia vulgus. VIRGIL.

Folia laurus pestilentiæ contagia prohibent. PLIN.

Aut neglecti desertique, qui incidissent morerentur; aut assidentes curantesque eadem vi morbi repletos secum traherent. LIV.

———————————Fœtas
Nec mala vicini pecoris, contagia lædent. VIRGIL.

Post ubi contagio, quasi pestilentia, invasit. SALL.

ference to the quarantine laws, can be justified, seeing that the risk attending the neglect of these laws, did any doubt remain on the subject, is so frightfully disproportioned to any inconveniences which they occasion.

Nec tondere quidem morbo, illuvieque peresa
Vellera, nec telas possunt *attingere* putres.
Verum etiam invisos, si quis tentarat amictus
Ardentes papulæ, atque immundus olentia sudor
Membra sequebatur : nec longo deinde moranti
Tempore, contactus artos sacer ignis edebat. VIRG.

CHAPTER VI.

On the prevention of the Plague.

THAT as man continues, age after age, to disregard the lessons of experience, there is but a slender hope of his condition being materially improved, was the reflection of a profound observer * ; and the force of it was indeed most fatally exemplified during the late Plague of Malta. Upon that unhappy occasion, the vigorous precautions long sanctioned by the practice of mankind, and repeatedly proved to afford the only chance of protection against this insidious disease, were so tardily or imperfectly carried into execution, that it became impossible to put an immediate stop to its progress. Indeed,

* Volney.

the events of that crisis, if we had no other evidence, abundantly point out the necessity of every country liable to this scourge, being provided with an *efficient code* of health laws *ready to be acted upon at the shortest notice*, and that the due execution of these laws, so far from being discretional, ought to be absolutely imperative upon those to whom their administration is entrusted. To exemplify the truth of these remarks, it will not be necessary for me to refer beyond the measures adopted by the government of Malta in 1813.

In looking back to the histories of other Plagues, (as well in Malta as elsewhere,) I often discover that the time which ought to have been occupied in prompt and energetic action, was irretrievably lost in deliberations, remarkable for little beside their impotence and indecision. Long after the Plague was detected in Valetta on the last occasion, the decrees of Public Health were exclusively taken up with merely *recommending* measures of secondary importance, in

place of peremptorily requiring obedience to those upon which the efficacy of every other depended, and whilst daily proclamations of wearisome prolixity teemed from the press, announcing the expediency of purifying, expurgating, scouring, whitewashing, &c. &c. there were no decided steps taken to prevent the pestiferous congregation of the inhabitants, either in the streets or houses. It is a remarkable coincidence, that Malta was doomed to a similar fate by the same procrastinating system in the former Plague of 1675; and we are told by the historian of that event, that before the name of the disease was decided upon its progress had become irresistible. Many of the voluminous proclamations of 1813 were occupied with little besides remonstrances against disobedience of orders, and contained statements more fitted to beget distrust as to the nature of the distemper, than to reconcile the people to the sacrifices which were indispensable for their deliverance. Nay, the very punishments which were decreed for disobedience,

as they were not followed up*, must have been calculated to produce indifference rather than proper respect for the authorities which issued them,

" And as fond fathers
Having bound up the threatening twigs of birch
Only to stick it in the children's sight
For terror, not for use; in time the rod
Becomes more mock'd than fear'd; so their decrees
Dead to infliction, to themselves were dead."

But, beside the want of determination which marked the measures of this period,

* The amiable dispositions of the late civil Commissioner satisfied me that this leniency was dictated by the purest and most benevolent intentions, and one has only to regret that he should, in point of fact, have so widely mistaken the road to mercy, and been ignorant of the value of a more rigorous exercise of his authority. The precept of Muratori ought never to be lost sight of in such emergencies: " Non la mansuetudine e piacevolezza ma il rigore e qui necessaria a chi governa." One or two examples made at the beginning would have outweighed volumes of mere denunciations. The hero of la Mancha himself was not ignorant of this, who, however speculative his notions may appear on other subjects, made no bad pretensions to legislative skill, as will

and which were calculated to induce a belief that their authors themselves were far from convinced of the actual danger of their situation, some degree of doubt, as to the presence of Plague, was liable to be excited in the public mind by the undecided terms in which even the reports of the Health Department were conveyed.

In support of these remarks, I shall present the substance of certain official orders published under the authority of the Malta Government for some months after the island

be seen by the following admonitions given to Sancho, when about to enter upon the arduous duties of his government:— "Do not issue a great number of ordinances, but take care that those which are published be good, and, above all things, see that they are maintained and put in execution; for those ordinances which are not observed, might as well be annulled, as they serve to demonstrate that the Prince who had discretion and authority to enact them, wanted power to enforce obedience," to which may be added the remark of the learned Archbishop Leighton, that "too many rules may as much confuse a matter as too few, and do many times perplex the mind and multiply doubts, as many laws multiply pleading."

was infected ; and as the expedients which these documents recommend, for suppressing the contagion, offer a striking contrast to the energetic measures which it was afterwards found necessary to adopt, and which proved so speedily successful, the mistakes that led to the spread of the disease will be placed in a more conspicuous light than could be done by more general statements.

I refer these orders to three periods—the first commencing from the announcement of the first suspicious case of Plague in Valetta, until the specific nature of the disease was unequivocally declared — the second, from the period of this declaration to the appointment of an effective Police—and the last, from the appointment of the Police until the extermination of the disease in Valetta.

It would have been proper to include under a separate consideration such orders as may have been issued for protecting the public from the consequences of the infected vessel

lying so near to the city;* but if any spe-

* By permitting the vessel to anchor there, the fate of the island was surrendered to the mercy of those persons, already mentioned under the name of guardians, and who, from the smallness of their salary, were exposed to many temptations to violate their trust, or to be negligent in the performance of their duty. The following fact, related to me by the mate of a merchant vessel, whose veracity I had every good reason to be satisfied of, will mark in a striking manner the *vigilance* of those guardians of public health. The transaction was stated to have taken place during the month preceding the arrival of the San Nicolo, and whilst the Plague was raging in the Levant. This man having happened to pass in a boat near to a Smyrna ship under quarantine, was recognised by the master of the vessel, an old acquaintance, who, hailing, pressed him to come on board. But he declined so doing, considering that his compliance would amount to a very wanton violation of the Health Laws, upon which the other threw a basket of figs into the boat, exclaiming jocosely, "you are in for it now as well as myself," meaning that he was equally subject as himself to be detained in quarantine. Still, however, failing to prevail over his objections to come on board, the Smyrna captain waited an opportunity while the boat lay along-side, and actually leaped into it, soon after which his friend returned to Valetta, and mixed as usual with the people.

If any doubts existed as to the right of burning or otherwise destroying the Plague ship, St. Paul's Bay was open for her reception, or if the fitness of this bay was not known,

cial directions were given on this subject, they were not known to me.

The first announcement of a suspicious

there remained another alternative which would not have been less efficacious in extinguishing the contagion, I mean that process which is termed by sailors, "*Swifting*," aud which is performed by passing cables round the ship's bottom; and sinking her in such a manner as to allow of her being raised again. As the cargo consisted principally of bale goods, a few days immersion would not have materially damaged the bales, and there were many instances that might have been pleaded as precedents for the measure. The same means were used with a Spanish frigate in the time of the grand Master Rohan, when the disease was smothered at once, without passing the walls of the Lazaretto. Our late prime minister, likewise, made no scruple of treating suspected vessels in the same summary way, pleading for his justification the simple but substantial precept of salus populi suprema lex. By the Government Journal of Malta, it appears that any vessel that may arrive in future under the same unfortunate circumstances as the San Nicolo will be very promptly disposed of. The terms of the Journal are as follow, published under the authority of the present governor.

"When on the arrival of any vessel it may appear that the Plague actually rages on board, such vessel will be refused admittance or burnt with her cargo, as circumstances may require."

case of Plague in Valetta is dated the 5th of May, and was accompanied with the following observations and instructions: "The King's Civil Commissioner having been apprised by the Board of Health that two individuals, who resided at No. 277 in Strada San Paola in this city had, during the existence of a malady with which they were attacked, and which terminated fatally to both, exhibited symptoms *strongly indicative of the Plague*, and that another individual of the same family had been seized with *similar symptoms*, His Excellency deems it essentially necessary, with a view to the preservation of the public health, that besides the removal to the Lazaretto of the sick persons, and of those who had more immediately communicated with the family, the following measures of precaution and other suggestions of the Board of Health should be carried into effect.

"I. That an embargo be continued on the shipping in the Port during the present state of *suspense* and anxiety.

"II. That in the view of more effectually

securing the health of the community, until *it can be ascertained whether the malady apprehended does really exist*, the Courts of Judicature, the Theatre, and other places of public resort, be for the present closed, and that during this interval the operations of the respective offices of Government be limited to such transactions only as the indispensable exigencies of the public may be found to require.

" III. That the various quarters of the city, including all the towns within the fortifications, be placed under the immediate inspection of medical persons, who, aided by other respectable inhabitants, shall daily visit the districts respectively allotted to them, and report their remarks for the information of the Board of Health.

" In regard to the farther regulations to be observed, they shall from time to time be promulgated by the magistrates of Police, or otherwise, as occasion may require." His Excellency then goes on to recite a passage from a report of the Board of Health, an-

nouncing that " the city is free from any contagious malady, excepting only the family of Salvatore Borg, (then in the Lazaretto), respecting which the Board sees no reason for diminishing the *suspicions* it has entertained."

In a notice of date the 7th of May, the Board states that several persons are affected with *suspicious* symptoms; one of these " la di cui malattia fortemente credesi " essere pestilenziale"—another exhibiting after death " alcuni segni indicanti la peste." The cautionary measures directed are, that the superintendents of the different districts of Valetta shall punctually make their reports of the state of the public health, and punish (indefinitely) such as are disobedient to their orders.

On the 10th it is directed that the general purification of houses shall commence by washing with soap and water, whitewashing, scouring, and cleansing with salt water, destroying old clothes, rags, &c. &c. &c.

On the 12th a perfectly favourable report

is given of the public health ; but it is stated, that in consequence of the appearances on the body of Salvatore Borg, the College of Physicians have characterized the disease a *contagious pestilential fever*, adding, that the Board of Health *recommend* an attention to the same precautions as before, as necessary in the present *doubtful state of things*. It is also *recommended* that people should remain in their houses, and avoid touching any person or thing that might convey infection, some instructions being added on the safest mode of buying provisions and necessaries, after which the article concludes with observing :—" The chief of every family who *wishes* to adopt these precautions must announce his *intention* to his dependents, who *not consenting* to conform thereto, under apprehension of the rigorous punishments prescribed for the violation of the Quarantine Laws, shall be allowed to *quit the house*. This precious document is signed by the President of the Board of Health.

On the 13th the Board observe it would

be *desirable* that boys should not continue to run about the streets defeating the precautions; and it is represented that the College of Physicians are *confirmed* in their opinion that Salvatore Borg's disease is contagious and pestilential.

A notice of the 14th expresses surprise that so many persons are neglectful of precautions.

In another of the 15th, the island is again represented to be in a perfectly favourable state, "no case having occurred worthy of remark:" It is however, deemed necessary to order *fines* to be levied for offences against public orders.

On the 17th, the Goverment, after observing that many persons had concealed their illness, offer a reward for their discovery, and for the FIRST TIME denounce *death* against such as are convicted of robbing and pilfering from infected houses, and prohibit the meeting of public and private schools. On the same day, after announcing that the malady had begun to make farther

progress, the Board of Health observe that the gates of the city have been closed against all persons who have no business in Valetta.

On the 19th a census of the inhabitants is directed,—their names to be affixed to the doors,—and the people to shew themselves at their windows when required so to do by the superintendents of districts, *on pain of fine or corporal punishment.*

On the 24th there are some severe animadversions made on the conduct of such as endeavour to propagate the opinion that the prevailing disease is not the Plague, and the government directs that the *decisive* opinion of the College of Physicians be *published for general information.* Accordingly, the physicians report, that *having seen various individuals afflicted with the prevailing malady within the last few days, they are more decidedly confirmed in their opinion, that it is the true Plague,* and express surprise *that the people should have had any doubts on the subject.*

The reader will bear in mind, that from

the date of the illness of Borg's first infected child up to this public decisive declaration of the nature of the disease, more than five weeks had elapsed.

I shall next notice certain orders and arrangements between this period, and the appointment of an effective Police.

On the 29th of May Government observing a general disregard of precautions, ordains, on pain of a breach of the quarantine laws, that no person shall change his place of residence.

On the 3d of June, the disease gaining ground rapidly, it is commanded that there shall be *a temporary suspension of* SOCIAL AND COMMERCIAL INTERCOURSE, as promising the only chance of arresting the contagion; and a *hope* is expressed that the public will have *good sense enough to yield a ready obedience—any refractory person to be arrested, or even a whole family to be put in quarantine in their own houses if disobedient to orders!* To secure a more exact com-

pliance, Valetta is divided by barriers * into districts, and all commercial business, with the exception of certain licensed shops, suspended.

On the 29th a new Council of Health is constituted under the title of an "extraordinary council."

I come now to the last division of official instructions, and to which Malta is immediately indebted for its preservation.

On the 3d of July orders are issued for raising an *effective* Police, *upon which the enforcement of all regulations* is now stated *essentially to depend*. An Inspector-General is appointed at the head of the Police, and is invested with full powers of checking every kind of disorderly conduct and disobedience of orders. The measures of this officer were *seclusion* and *segregation*, and almost

* For a considerable time after these barriers were erected the people paid no regard to the *recommendation* of remaining in their dwellings; and in consequence the barriers, instead of preventing, greatly promoted their congregation in the streets.

identically the same as were recommended by myself on the first moment of a report of the Plague in Valetta *. These means,

* These measures were stated in a letter to the Board of Health on the 5th of May, and immediately after the report of the first suspected case in Valetta. As it would take up too much room to transcribe the communication at full length, I shall content myself with merely giving the heads of my proposals for checking the farther progress of the contagion, and which were as follows: the proper provisioning and appointment of the Lazaretto - the selection of the most trust-worthy persons for the service of the Lazaretto, their wages being raised to invite a sufficient number—the employment of the troops as guardians—the universal shutting up and provisioning the people in their own houses, excepting such as were engaged in the public service—the appointment of patroles in the streets and highways, with authority to prevent every kind of intercourse among the people by the sword, if necessary—a census of the inhabitants and the obliging them to shew themselves at stated times at their doors or windows for inspection, in order to the immediate detection of the disease—the segregation, insulation, and provisioning of the poor—burning or purifying of goods belonging to the sick—the confinement of animals liable to transfuse the contagion—the exclusion of all vessels from entering any of the Ports of Malta—the prevention of communication between the vessels in the harbour—finally, these rules to be proclaimed and enforced without any respect to persons.— The letter concluded with the following reflections, " I cannot conclude without expressing my

were in a very short time followed by the most visible success; and so early as the 17th of this month it is proclaimed that the contagion has already begun to receive a decided check. On the 1st of August it is ordained that any person who shall change his place of residence is to be punished with *death*, unless he shall have obtained permission from proper authority; the same punishment to be inflicted on those who conceal their illness—receive any article out of an infected house, or connive at others so doing. The people are all absolutely shut up * in their houses, with the exception only

heartfelt regret at the delay with which some of these measures have been kept back,—while we are deliberating and discussing, all means may prove ineffectual, as happened before, under similar circumstances, in this very island. On an emergency so frightful as the present, I cannot help most cordially concurring with the sentiments of an able writer: "in si gravi pericoli, e in tanta necessita, di conservare il popolo, chi governa, si potra ben pentire di non aver fatto assai, ma non mai d'aver fatto troppo. Un solo peccato d' indulgenza, puo portare l' eccidio a un pubblico tutto."

* When the Inspector-General first proposed this mea-

of the government officers—no one being permitted in the streets under pain of capital punishment. The same measures are extended to the casals. Provisions, and necessaries of every kind, are carried to the houses of the inhabitants, and no shops allowed to be open. In short, the people are now placed in complete quarantine; and to intimidate the refractory, a Maltese, of the name of Antonio Borg, (a luckless name, it will be allowed), who was detected concealing his illness whilst labouring under pestilential symptoms, is publicly made an example of and shot. From this time until the contagion was completely eradicated in Valetta, the orders of Government are simply confined to such details only as were essential to carry into effect measures of segregation, seclusion, and expurgation, if I except some instructions to prevent persons

sure, it was thought impracticable. To prove the reverse, he made the experiment in a single district of Valetta, which succeeded so speedily, that the whole city was immediately placed under the same restrictions.

going on board of ship * before performing quarantine of observation.

A code of Health Laws, in spirit similar to those which proved so efficacious on this occasion, are, I understand, framed by the present Governor, and in readiness to be acted upon at the shortest notice; and as His Excellency has already been conspicuously distinguished for suppressing the Plague within the space of two or three years, not less than three different times †, the Maltese derive

* Since the greater part of this work was printed, I find it stated in a public notice, dated the 4th of December, 1813, that no real case of Plague was communicated to any vessels in the harbour from the commencement. If this be the true state of the fact, it adds one proof more to those which have been produced, that the disease could not have sprung from any specific constitution of the air. The statement, however, is at direct variance with the earlier reports of the public health, alluded to in the former part of this volume.

† "This is the third Plague," says Dr. Granville, "which Lieut.-Gen. Sir Thomas Maitland has succeeded in completely stopping and in preventing its propagation while commanding in the Mediterranean."—"The plan of *insulation* which Sir Thomas has adopted, founded on the firm convic-

every satisfactory assurance of the sufficiency of the provision he has left for their security

tion of the validity of the doctrine of contagion is so admirably conceived, that were the Plague to be imported again into Malta, in less than a week every district, street, and house in that town would be respectively insulated, so as to place each individual beyond the contact of every other." (See the Doctor's letter to the President of the Board of Trade, A. D. 1819.)

It is on record, likewise, that Malta, between the years 1519 and 1675, was, by vigilant measures, protected from Plague on four several occasions And I hold it as not less due to the efficacy of a similar provision, that Sicily continued in security throughout the whole period of the sufferings of Malta in 1813. From the first moment that the state of the latter island was known, the Sicilian government determined inflexibly to allow of no intercourse between it and their own shores, excepting on terms of the most rigid restriction: in proof of which I may mention a circumstance that was told me by an English nobleman who happened to be on his travels in Sicily at that period. Thinking it very unaccountable that a country so contiguous to Malta should not have shared the same fate, he made particular enquiry into the cause of so singular an exemption, and was answered by his informant pointing to one of the numerous gibbets on the coast, emphatically exclaiming, "that, Sir, is our only defence." I have formerly observed that to enter into detail of the instances that might be cited in different countries to shew the efficacy of restrictive measures, would be incon-

in future. Seeing that the contagion is thus under control, what a sad display of mismanagement on the part of the Government and Health Department of Malta have we not before us in the preceding details! The best lesson that can be derived from such unhappy occurrences, is the impressing the conviction that the most prompt and decided

sistent with my purpose. I will beg to notice, however, one single example more, as it is one of the most convincing and remarkable; I allude to the long escape of the populous and commercial city of Marseilles. If the reader be desirous of obtaining particular information concerning the quarantine system in force at this place, he will be gratified by perusing a work entitled Dictionaire universelle de Commerce dedie a la Banque de France, in which the author breaks forth into the following exclamation, after remarking upon the excellence of its quarantine system—"combien des fois n' a t'elle pas été enfermé (la peste) dans cette enceint du Lazaret! combien des fois ne le sera telle pas encore! cependant lout le monde l'ignore. chacun dort dans une parfaite sécurité." It is needless to add, that there never was any part of the world more frightfully visited by pestilence than Marseilles in former times, even when its commercial intercourse was not so extensive by much as it is at the present day; and, perhaps, there is no place more openly and perpetually exposed to import the contagion than it has continued at all times.

measures ought at once to be had recourse to, and that the greatest of all evils is to temporize. This was the opinion of the able writer* to whose sound precepts I have had occasion more than once to refer, and whose concurrence with my own sentiments is so impressively stated in the following sentence:—"besogna persuadersi che diligense umane possono preservare, e preservano dal contagio i paesi, e per conseguenza che il non usarle per quanto si puo, e a tempo, questo e un solenne e miserabile pazzia, o pure una negligenza difficilmente degna di perdono si presso agli uomini, come presso a Dio."

* Muratori

CHAPTER VII.

Observations on the symptoms, treatment, &c. of the Plague, as it lately occurred in Malta.

THE experience of the medical authorities employed during the late Plague of Malta, I regret to say, was productive of but little accession to our knowledge, in respect either to its *rationale* or treatment. That I may not, however, be chargeable with negligence, by omitting to notice a branch of my subject so important, I propose to devote this chapter to lay before the reader such notes*, as I was enabled to collect from my personal observation, and the opportunities

* The principal matter of the following observations being to be found in my paper in the Edinburgh Medical and Surgical Journal, I propose to confine myself as closely as I conveniently can to this document, only extending my reflections upon such points as appear to me to have been rather hastily dismissed in that communication.

which occasionally occurred to me of communicating with some of the most experienced practitioners in the island. The remarks, which I offer on my own authority, if found to possess few other recommendations, will deserve, at least, to be considered as a faithful record of facts, the greater part of which were taken down before the first impressions were effaced, and many before leaving the wards of the pest-house: and, in respect to one remedy, the cold affusion, of which I believe I was the only person who made trial, I hope to bring forward some facts of a description to encourage a more extended application of its powers in cutting short the disease at its commencement.

Symptoms.

The Plague is a disease so eccentric as to present phenomena in variety and combination almost unlimited, so that it may fairly be regarded as, at once, the most undefinable and most unmanageable of all ailments in-

cident to the human frame. Usually, however, its approaches were marked by some of the following symptoms—head-ach, nausea, sudden prostration of strength, stupor, rigors, vertigo, vomiting of a vitiated bilious matter, pain of the back, sanguinous suffusion of the eyes, with a peculiar cast of them, which has been imperfectly attempted to be described by a certain writer * as of a "muddy dull colour". The pulse was very variable, but often rapid in the extreme; indeed frequently so rapid as almost to defeat every attempt to reckon it, the pulsations succeeding each other in a continued stream rather than marked by any distant intervals. The tongue was usually white, sometimes streaked with red, or covered, as with a whitish pellicle, but I have observed it clean even in the most malignant disease. The bowels were frequently constricted, but more generally purged, and there was in the greater number of cases, a very distressing

* Russel.—It was, doubtless, a similar appearance in the eye which Virgil meant to express by oculos stupor urget inertes.—Vide Georgics, 3d Book

sense of oppression at the præcordia. Fewer or more of these symptoms marked the disease early after its accession, yet it was not uncommon for glandular and other tumors, without any apparent general disturbance of the system, to give the first alarm of its presence.

It could not be foreseen that any peculiarity of constitution would confer security against its attack.

The character of the fever which accompanied the severer forms of the disease was very irregular, existing in every degree of intensity from the most urgent synocha down to the lowest form of typhus, and in some instances having accessions of rigor at the commencement, not unlike an intermittent. These rigors, however, were not generally, as in intermittents, followed by heat and perspiration, neither did they observe periodical times of recurrence. Thirst was not a constant symptom, even when the pulse was much accelerated, and when there existed every appearance of strong febrile action. The appetite was, in many instances, not

only not impaired, but bordered on bulimia. This preternatural desire for food often accompanied the convalescent stage. The alvine dejections were very variable—but in general attended with copious discharges of a very fœtid bilious matter, or passed in scybala. Worms of the round species were voided not unfrequently, and their expulsion was always a very hopeless symptom. It is remarkable, that on the first seizure several patients were unconscious of their state, and would insist upon being perfectly well, though there was, at the same time, something so characteristic in the eye and features, that a very little experience was necessary to enable the most common observer to see distinctly the actual state of the patient, and to discover that this assurance was mere self-delusion.

The suddenness with which the Plague makes its attack is very remarkable, many being apparently in the full enjoyment of health but a few hours before death. The duration of the disease is not less remarkably

inconstant; and, although it terminated in many cases so very suddenly, it was in others protracted to the end of the second or the third week before the fatal conclusion. In some, after every appearance of danger was surmounted, a phthisis or dropsy supervened, and proved fatal. Seldom, however, above seven days elapsed until the event was determined, and in the greater number of cases the scene was closed in three, yet many, though having large tumors in the groin or axillæ, continued able to walk about the streets, and in a few days were restored to perfect health. It was not unusual for glandular swellings to shew themselves only a very short time before death, and in several cases after this event, they subsided entirely out of sight, when livid spots, or *petechiæ*, about as large as a silver penny were discovered upon the breast, arms, wrists, back, and lower extremities. In a few, these spots did not make their appearance until the body was quite cold, in others, they accompanied the disease throughout.

The carbuncles which came under my own

observation were of that description mentioned by authors under the denomination of the wet carbuncle, sloughing into deep ulcers, and attended during their progress to suppuration with an intensely painful sense of burning. At first they arose as a common phlegmon, gradually acquiring a diffused and highly inflamed base, and not far from the apex, having a concentric areola of a deep livid, and more internally near to the summit, of a cineritious colour, with a glossy appearance. These eruptions were not confined to any particular part of the body.

Of the dry carbuncle, or that kind which is produced by the confluence of those minor tumefactions, called blains, I have not had experience in my own practice. They betokened a very unfavorable termination.

These various forms of the disease seemed to me to admit of being comprised under three general classes—the first in which the impairment of the energies of the brain and nervous system was the most conspicuous feature—in the second, the state of the brain

was the very reverse, and the symptoms denoted a high degree of excitement—the last presented symptoms not unlike in character to those of the second class, but much milder, and attended with no apparent fever.

In the first, the characteristic cast of eye and countenance were peculiarly striking —the stomach very irritable—debility extreme—and carbuncles made their appearance early. When this form of the disease was accompanied with parotid swellings, it presented no hope; and, according to the most probable calculation, the proportion of recoveries did not exceed ten in a hundred. Cases of this description were chiefly prevalent after the contagion began to commit its first ravages.

In the second class the pain of the head was intense, thirst sometimes urgent, countenance flushed and utterance hurried. The glandular swellings came out slowly, and, after appearing, receded with an aggravation of all the symptoms. The carbuncles became soon gangrenous, and the delirium

often resembled the ferocity of a maniac. This description of the disease was nearly as destructive as the former.

In the last class all the symptoms, as already observed, were, comparatively, very mild—and the glandular tumors proceeded on gradually and kindly to suppuration. This is the form of Plague to which I have alluded as affecting those who were found walking about the streets, apparently in health. The average deaths were computed not to exceed sixty in a hundred.

It might be taken as a general rule, that the less severely the brain participated in the general derangement, and the more remote the symptoms from indicating debility, the prognosis was proportionally encouraging. Still it was not unusual to find, after several days of apparent convalescence, that sudden death surprised us in the midst of our hopes. When glandular tumors came out tardily, or remained stationary, the result was in the greater number of instances unfortunate, and the nearer any kind of tumors or erup-

tions were seated to the head, the danger became the more imminent.

From the state of the urine little could be collected, nor did it seem to be materially influenced by the vicissitudes of the disorder.

A generally diffused moisture over the surface was among the most auspicious signs of amendment.

Diarrhæa, when violent, never failed to produce a fatal issue.

After the enumeration of the foregoing symptoms—symptoms not less peculiar in their combination than character,—it would be trifling to set seriously about a formal diagnosis. It has been alleged that the Plague is only a modification of remittent fever, whilst by others it is assimilated to typhus. But that a disease can properly belong to any particular class of fever, which frequently exists without any perceptible fever whatever, is not a very intelligible mode of nosological classification. It is checked or extinguished by a degree of heat which is not only compatible with, but altogether

necessary for, the production of remittents, and it will not arise or scarcely exist at the reduced temperature wherein typhus is most prevalent: neither will typhus exist in the degree of heat at which the Plague has been known to be most actively diffused *.

Prophylaxis †.

After what has been anticipated (at p. 145 et seq.) on the means of defending the body from contagion, it remains for me only to add a few observations regarding the articles of oil friction and vaccination, which I could not notice before without making too long a digression from the subject more immediately under consideration.

* The truth of this will appear by referring to the history of the Plague, as it formerly prevailed in London.

† It will be observed in my observations on the Plague inserted in the Edinburgh Medical and Surgical Journal, that I was disposed to place no reliance on any means of prevention. However, at the time of transmitting that communication, I was still engaged in my enquiries into the subject, and had as yet not sufficient data upon which to ground a decided opinion.

Notwithstanding the extravagant terms in which oil has for some time been extolled for its preventive powers, there was a superabundance of proof in Malta that it is by no means entitled to so high a character. The facts upon which this opinion is founded, are not limited to my own observation only, but confirmed by the experience of every intelligent observer from whom I could obtain any satisfactory information. The greater number of the Sicilians who came to Malta for employment in the service of the sick, perished, although in the daily practice of inunction before engaging in their perilous duties. A gentleman who superintended the health of one of the districts of Valetta assured me, that although he had constant opportunities of seeing oil frictions used by those under his immediate orders, he was satisfied that it was not merely useless as a defence, but even hurtful to the general health, by the debility which succeeded to the profuse perspirations which it occasioned. Several instances occurred

in the Third Garrison Battalion of persons being attacked, though obliged to use oil frictions with all the punctuality of military discipline. In short, there were so many instances of persons living in the closest intercourse with the infected *who escaped without the use of oil*, and so few well attested cases of persons having come into actual contact with pestiferous matter who *were protected by oil alone*, that I cannot hesitate to conclude that the opinion * of its possessing any independent or certain prophylactic efficacy is destitute of foundation.

I have dwelt the longer on the article of oil friction, as I deem it of importance that the credulity of mankind be not imposed upon to place reliance on any doubtful

* This opinion has obtained currency of late years particularly under sanction of Mr. Baldwin, Consul-General of Egypt: but when we reflect upon the length of time which has intervened since inunction was recommended by that gentleman, and take into the account the destruction which the Plague has since continued to spread throughout Europe, it will be allowed that mankind have as yet had no great encouragement to place faith in its defensive properties.

means of protection to the neglect of others much more deserving of confidence, such as have before been particularly detailed.

Vaccination, as far as I could learn, was not recurred to with the express view of a preservative, but as it had obtained some repute for protective virtues, I took pains to ascertain whether those who had recently been vaccinated were rendered less susceptible, and I found that the instances of its inefficacy were every where numerous, of which I may mention rather a striking one, which was communicated to me by a Maltese surgeon who was much employed in the Plague, namely, that of a numerous family who had been recently vaccinated, the whole fell sacrifices to the prevailing contagion, with the exception of the parents, who had never undergone the operation.

As the penalty for feeling the pulse of an infected person, even through a tobacco-leaf, and with every possible caution, was not less than fifteen or twenty days close quarantine, the privilege of inoculating with Plague

matter was, of course, precluded * to all who were engaged in the public service; and I am not aware that any private practitioner, or other person, was ever led to make the experiment, neither, indeed, was there much to expect from it, if any reliance can be placed on the reports of those who have put it to the test.

Treatment.

Finding that the limits prescribed to this publication will not allow me to enter into a minute statement of the effect of every remedy to which recourse was had on this occasion, I must content myself with a brief notice of such only as acquired the most popularity.

In a disease of so multiform a character, it was impossible to regulate the treatment

* It was more particularly to be regretted that we could not avail ourselves of the information to be derived from morbid dissections, especially as there seemed to be good grounds for believing that after death the bodies wholly lose the power of giving out contagion.

by any thing like system; and we were, therefore, obliged to confine our practice to meeting the most urgent symptoms on general principles, borrowed from analogy. In my own practice I adopted two principal indications, namely,

I. To moderate the symptoms denoting increased action of the arterial system, and especially those which marked considerable congestion in the brain.

II. To sustain the powers of life when exhausted, and thereby to counteract putrescency.

With the first intention I employed bleeding, emetics, laxatives, sudorifics, refrigerants, and blisters; and with the second, tonics, and cordials.

Although I failed to ascertain, during my residence in Malta, that the natives had made any trial of venesection, I found, on my return to England, in a paper inserted in the Edinburgh Medical Journal by Mr. Stafford, who served as Surgeon to the Third Garrison Battalion in the Plague, that he

becamc averse to bleeding in consequence of being informed that the Maltese lost fifty-nine cases out of the first sixty in which they made the experiment. In my own practice I was contented with the local abstraction of blood by leeches applied to the temples, where the state of the brain appeared to call for active depletion. It seemed, however, very doubtful whether any benefit was secured by it, or rather that some positive mischief might not have been done by favoring the debility, to which there was so marked a pre-disposition, and from the excess of which inducing a state of putrescency, the chief danger was to be apprehended. I was assured by one of my hospital-assistants, that in a few cases of blood being taken from the arm by himself, it threw up a buffy coat, and the patients did well—by others, that the blood taken in this way exhibited a very dissolved state, yet the cases proceeded not less favorably. Amidst such conflicting testimonies it was impossible to get at a clear opinion. In re-

spect to the Maltese, although they may have deemed it expedient to make trial of blood-letting, I know that the practice was generally regarded by them with much suspicion.

Let me not, however, be understood to mean that bleeding is absolutely, and in all cases, hurtful; so far otherwise, the very discrepancy which exists among writers in regard to it, is, in my judgment, rather some proof that there may be instances in which, if resorted to under fit circumstances, it might prove eminently beneficial. But it is obvious that the success of any remedy in a disorder of so various a character, and which runs its course so rapidly, must essentially depend upon a variety of circumstances and contingencies peculiar to each case, and particularly the stage of the symptoms when it is received under treatment. In short, I conceive that the benefit which, according to the general consent of the highest authorities, is derived from blood-letting in other diseases, where a highly excited state of the brain is indicated, fully authorizes the opinion, that it

might, with careful discrimination, produce not less beneficial effects in the Plague.

Emetics were considered of service administered at the very first approach of the symptoms; at a later period, or when in a vigorous and full habit, there was evidence of much fulness of the vessels of the head, they were thought to be dangerous. It was not unreasonable to expect from the shock they give to the nervous system, their efficacy in relieving congestions of the viscera, and especially in promoting perspiration by determining to the extreme vessels, that considerable benefit might have succeeded to their exhibtion; but they certainly were in no instance found to produce the same visible good effect as is usually experienced from their operation in diseases of a purely febrile character.

In my own practice, and generally, I believe, among my medical brethren in the army, calomel and jalap were the aperients most commonly in use. The Maltese preferred those of the mildest kind, such as cream of tartar, manna, and almond oil,

the last being particularly esteemed on account of its gentle operations. A purgative, properly so called, they seldom administered, excepting when the bowels were obstinately constricted, in which case the Epsom or English salt, as they termed it, had the preference. This great caution in the use of purgatives was dictated by a dread of exciting diarhæa; and as it was always so very difficult to regulate the quantity of the evacuation, their scruples were, perhaps, justifiable in some measure, although it cannot be doubted that to allow corrupted humors or hardened fæces to remain irritating the intestines was a state of things not less warily to be guarded against.

The sudorifics most in estimation with the Maltese were the spiritus Mindereri and theriaca Andromache, aided by elder flower, which is a very favorite nostrum among the Turks *. These medicines were given with a

* Elder flower tea is looked upon as a kind of specific in the Levant, and was brought into great repute among the Maltese by a Jew quack, who, with all the confidence of his calling, engaged to cure the very worst cases of Plague, pro-

liberal hand in every form and stage of the disorder, as appeared by the treatment pursued in the Lazaretto, on the outside of which there was suspended a board †, having

vided he were well paid for his trouble, and the symptoms not too far advanced.—The latter condition of the agreement proving a very convenient subterfuge for his failures, whilst the first secured him a winning game at all events, this son of Apollo continued to dupe the unhappy people for a length of time, until the tide running at length very strong against the popularity of his specific, he found it expedient to make rather a hasty retreat from the scene of his operations, and leave the island.

† A British civilian practitioner, resident in Malta, who was tempted to visit this scene of suffering and wretchedness as well as myself, with the view of obtaining some knowledge of the Maltese practice, told me that he found both sexes lying in the torments of the disease in the same apartment, with no other covering than what they brought in on their backs. When I visited the Lazaretto myself there were twenty-eight cases under treatment, with only two individuals (convicts) to attend upon them, as nurses. Eight of these cases I particularly examined, of whom one had the femoral glands of one side in an incipient state of inflammation—another an axillary bubo, the third, fourth, and fifth, inguinal buboes--the remaining three were already dead—two of the surviving five, apparently in health, but the whole perished in about thirty-six hours. With such attendance and accommodation it surely was not possible fairly to estimate either the destructiveness of the disease, or the efficiency of remedies.

on one side written in chalk, the medicine for the day, or spiritus Mindereri, and on the other, the theriaca, or medicine for the night, without any apparent regard to age, sex, or constitution; and this routine seemed to be kept up with as much regularity as if Dr. Last had had the charge of the hospital committed to himself.

James's powder acquired some character in our army for abating the extreme heat and dryness of the skin, but I had no experience of it in my own practice. I was greatly disappointed in the effect of (that far-famed specific,) camphor, and, although administered in every variety of dose, it failed to allay irritation, even in those cases where its soothing qualities promised to be most serviceable. I observed manifestly more composng effects from medicines of the refrigerant class, especially nitre and cream of tartar, when assisted with lemonade or rice water.

When the brain was much disturbed, blisters were applied to the nape of the neck, between the shoulders, or to the hinder or

forepart of the head, and, in most instances, the advantage was apparent, although too often but temporary.

Of the effect of antispasmodics I was not able to obtain any satisfactory report, excepting of opium, which was accounted a precarious remedy; more apt to excite than allay the irritability and restlessness, and in some cases it was represented as adding very considerably to the stupor.

The tonics employed by the Maltese were calumbo, gentian, Peruvian bark, and serpentaria, and supposed to check the advances of debility when administered at an early stage. Wine and cordials were given with the same intention. To the former I could myself ascribe decided good effects, particularly in relieving low delirium, and in supporting the sinking powers of life at an advanced period. I generally preferred giving it in sago.

The treatment of the glandular swellings and carbuncles was comprised in emollient poultices, blistering, digestive applications,

and the actual and potential cautery. Poultices were of much use in abating the heat, pain, and tension, and after the carbuncles had arrived at a sloughing state, digestive ointment, especially if aided by scarification, was serviceable by promoting the separation of the dead from the living substance. Blistering under the buboes was a favorite practice with the Maltese, and designed with a two-fold purpose, either to promote their retrocession or to expedite maturation, but with what success was very doubtful. When the cautery did not succeed speedily in promoting suppuration, it occasioned the tumors to recede with a manifest aggravation of all the other symptoms.

Mercury.

The importance which has of late years been attributed to mercury for the cure

Plague, entitles it to a separate and more particular notice. Its internal exhibition was restricted to calomel. In the Maltese practice calomel was never given as a purgative, nor with any other view beside that of maturating buboes, for which purpose it was believed to be efficacious when employed along with mercurial frictions, or spread over poultices.

Mr. Stafford, of whom I have before made mention, and who has favored the world with a very clear account of the effects he obtained from mercury, roundly states that he had, while his regiment was infected, thirty or forty cases of tumor in the axillæ, which recovered under its use. In some of these the tumors suppurated, and in others they were absorbed. This gentleman narrates five cases at full length which were treated in the same manner, of whom three recovered. Two out of these three had their mouths made sore; the fourth died before the remedy could be used, and the fifth perished, not-

withstanding its use *. In my own practice calomel was given only as an adjunct to purgatives, and it therefore, perhaps, could not be expected to exert any of its supposed specific effects over the disease.

* I conceive the importance of the information will justify my transcribing these cases from Mr. Stafford's paper.

Case I.

14th June 1813.—Jerry Wiseman, aged 32, spare habit of body, complains of head-ach, pain across the lumbar region; has had slight rigours; eyes clear but dull, as though under the indirect influence of liquor; tongue a pale chalky white, with a brown streak in the centre; a tumour in the inferior gland of the groin, about the size of a walnut, with but little pain; bowels regular.

℞ Calom. pptt. gr. x.
Jalap. gr. xv.
Cons. q. s. ft. bol. statim sumend:

And to rub in two drachms of mercurial ointment along the course of the absorbents.

15th.—The bolus gave him several stools; the bubo, and the other symptoms, the same as yesterday. The ointment was again rubbed in, and the bolus repeated this day.

16th.—Eyes less dull; tongue clean and moist, with less of the chalky appearance; has had plentiful evacuations by

Cold Water.

The last article of treatment which remains to be noticed is the application of cold water to the skin by affusion.

stool; tumour stationary. To continue the ointment.

℞ Calom. gr. iij
Pulv. Jacob. gr. v.
Cons. q. s. ft. bol. cap. h. s.

17th.—Tumour seems less; tongue has lost the brown streak; he seems more cheerful; had a gentle moisture on the skin during the night, and slept well. The bolus and the ungt. hydr. to be repeated.

18th.—Tumour less, mouth sore, tongue nearly of natural appearance. The ointment was omitted, but the bolus continued several days longer. The mouth was kept tender with calom. gr. i. night and morning, until the 28th. He was discharged to his duty on the 2d July. He has continued in perfect health ever since.

Case II.

10th July 1813.—Robert Clark, aged about 24, spare habit, lively disposition. He had never been in the hospital in my recollection. Had mounted guard this morning, after a minute naked inspection, when not a suspicious spot was to be seen on his body or extremities. His feet and hands

There were but two cases in which I could venture to employ this remedy with any

had been carefully washed. About noon, I was sent for to visit him, he having been taken suddenly lame while on sentry. On examining him, I found a small pimple in appearance between the large and the next toe of the right foot. The pain he declared to be excessive, and likened it to a burning coal. While inspecting it, I could discover rising from it a red streak, which speedily ascended up the inside of the leg, and very soon afterwards a swelling took place in the inferior inguinal gland. He was immediately sent to the hospital. The foot was well washed in warm water, a cataplasm applied to it, and the whole of the inside of the leg was rubbed with ungt. hydr. without any regard to quantity, as long as he had strength to rub it in, and calom. and jalap, each gr. x. given him at the same time. On seeing him in the evening, the pain from the pimple was less, but still severe, with considerable pain in the groin. He had several stools. He seemed to have some fever, and apparent giddiness in the head, but did not complain of pain in it.

On visiting him in the morning, I found the pimple had now the appearance of a small ill-conditioned ulcer. It was again cleansed, and the cataplasm applied. On washing away the ointment to look at the absorbent, I found it considerably enlarged; and, arming my finger with a little of the ungt. hydr. I traced it from the sore to the bubo. It no longer appeared charged with a red fluid, but had a yellowish look. The tumour was, at this time, the size of

hope of advantage, and in one of them it was followed by decided and immediate

a pigeon's egg. The ointment was again used in the same way, and the bolus repeated. This method was continued until the mouth became very sore. The ulcer soon healed, and the bubo gradually disappeared. He went to his duty on the 25th of August, and has continued well. His description of the first attack was, that he was standing sentry on the top of the arch, through which was the only passage into the country; that a pest-cart had that instant passed through, heavily laden with dead bodies, from which proceeded a horrid smell; that the attack was instantaneous, as though he had been shot. I was instantly sent for, and was with him in three minutes, my quarters being near his post. My opinion was, that, from some defect in his shoe, some pest-dust had got in, and was the true cause of his complaint. He mounted guard at seven o'clock in the morning, and had to march half a mile from the barracks to his post.

I have often read, and been otherwise informed, that when the pest-tumour could be brought to suppurate, the result was frequently favourable. I had determined, if I found a tumour of this description that would not submit to the mercurial inunction, with the calomel purges, &c. to throw in the bark and wine largely.

Case III.

Oct. 17th.—Albert Rotoski, a Pole, aged 35, spare habit of body, dark complexion, was this day placed in

amendment. The patient was almost instantaneously relieved from the distress of a

observation, complaining of slight pain in the head and back; tongue clean and moist, but much of the chalky appearance; eyes heavy, but clear; bowels regular; spirits much depressed; a small tumour in the lower gland of the left thigh. He was immediately ordered the Cal. c. jalap. and the following:

R Cal. gr. iii.

Pulv. ant. gr. 5. to be taken at bed-time; and to rub one drachm of mercurial ointment along the course of the absorbents.

18th.—Seems to have more fever; headach worse; more vivacity in the eyes; has had several stools; had no moisture on the skin; has more thirst; tongue much whiter. A blister was applied between the shoulders; the saline mixture given him frequently; the bolus and ungt. repeated in the evening; and an emollient cataplasm to the bubo.

19th.—The bubo a little larger; slept a little in the night; had some moisture on the surface; the blister rose well; seems to have less pain; tongue the same as yesterday Ordered all the medicines to be continued.

20th.—Symptoms all nearly the same as yesterday; bubo stationary; with a little more pain; has had no stools the last 24 hours; mouth not in the least sore. The bolus Cal. c. jalap. was given instantly; and the bolus Cal. c. pulv. ant. and the ointment to be repeated in the evening.

21st.—Nearly the same in every particular; bubo stationary, with considerable pain; has not had sufficient

dry heated skin, and there succeeded a copious diaphoresis with great abatement of

stools from the bolus. Ordered him an ounce of Nat. vitr. On visiting him in the afternoon, found him considerably worse; great giddiness in the head, and apparent paralysis of every limb, but perfectly sensible, and answered correctly to all my questions. In attempting to go to the close stool, which was within two yards of him, he had fallen several times, had cut his head, and bruised his arms and shoulders very severely. Dr. Calvert (to whose recollection of this case I beg leave to refer) saw him in this state. I asked his opinion as to giving him bark and wine, as I had long made up my mind to try it in such a case. He said, he "looked on the man as lost;" but desired me to try any thing I pleased to save him I instantly ordered a drachm of pulv. cinchon. to be taken every hour, and a pint best white wine to be taken during the evening, and Calom. gr. iii Pulv. Jacob. gr. v Opii pur. gr. iss. to be taken at bed-time. Dr. Calvert ordered that he should be moved to the pest-hospital in the morning, if alive.

22d.—Infinitely better; slept well during the night, with a gentle and general moisture on the skin; the bubo less painful, and larger; has completely lost his vertigo, and apparent paralysis. When the sick-cart came for him in the morning, he insisted that the men that came with it should not touch him; nor would he go into the cart, but declared he was able to walk, which he did up a very steep and rough hill, and down again, upwards of half a mile, to the boat,

restlessness and an inclination to sleep. His recovery was complete in a very few days.

which conveyed him to the pest-hospital. I feel that, for the man and myself, it was very fortunate that Mr. Cloak a young man of great ability, and then first assistant-surgeon to this battalion, was on duty at the hospital at that time. He knew my ideas of the disease, and my mode of treating this case. He was so kind as to continue the same plan. In a few days the bubo suppurated; he opened it, the man perfectly recovered, and has been in good health ever since.

It will probably be alleged against me, that I did not use the remedy in the last case with my usual boldness. My answer is, I was under critical inspection.

It is the duty of every practitioner, in writing on such a disease, to record his failures as well as his successes; and, if he has been guilty of inattention, to record that likewise, as a beacon to himself and others.

Case IV.

July 22d—John Evans, aged about 30, spare habit of body, much addicted to liquor, always dirty and slovenly, for which reasons he was made a pioneer, to clean the barracks, carry burdens, go messages, &c. He was employed on this day to carry something to Boschetta, a distance of seven miles; he returned in the evening very drunk, with two black eyes, and several bruises about the arms and shoulders. I found him in this state the next morning, sleeping among his comrades of the same description. I

The affusion was employed about the second day of his attack, and under circumstances

immediately placed him in observation, gave him an ounce of nat. vitriol, and inspected him morning and evening naked. Found no suspicious marks on the trunk or lower extremities. I gave him no other medicine.

25th.—On this day, the steward of the hospital came to inform me, that this man had a total suppression of urine; that on his trying to pass it, on his hands and knees, (he, the steward) saw on the lumbar region a tumour, small at first, but rapidly increasing in size as he was looking at it. I lost no time (the distance was half a mile) in going to him, and found him dead. The tumour appeared to me to be a carbuncle of the most malignant kind. I ought to have supposed that extreme debility would come on from the fatigue of his long journey under a summer sun. I ought to have known the debility that comes on after excessive drinking, perhaps spirituous liquors. I ought to have supposed he had been in contact with some pest person, it having at this time spread to every part of the island. In fact, I should not have waited to treat the disease, after it appeared in such a habit as his, there being not strength sufficient in the system to resist it one hour.

Case V.

Oct. 20th.—Edward Traynor, aged about 27, stout, well made; had never been sick in my remembrance; was placed in observation this day. I was informed that he had

the most encouraging, certain features of the disease agreeing to the conditions, which in fevers would be considered peculiarly adapted to the practice.

In the second case the affection of the brain was too violent, and the symptoms existed altogether in too advanced a stage to warrant but a very remote expectation that

slept on the battery, exposed to the night dews, two nights, with a common woman. He complains of severe headach, thirst, nausea, pain in the back; tongue white and dry. This was not supposed to be a case of Plague, as the imprudence of his conduct was sufficient to account for all the symptoms. I ordered him immediately into a warm bath, and to take an emetic while in it; a blister between his shoulders, and Pulv. antim. gr. vi. Opii gr. i. to be taken at bed-time; mist. salin. very frequently; the bolus Cal. c. jalap in the morning.

21st, Sunrise. — Considerably worse; much wildness in the eyes, and slight inflammation, vertigo, and slight delirium; tongue much whiter. Saw him again at twelve o'clock. The bolus had not operated to my satisfaction. Gave him an ounce of natron. vitr.; saw him again in the evening, and found a tumour in the usual place in the groin. The bolus was repeated in the evening, and two drachms of ungt. hydr. rubbed as usual. The next morning he was much worse. Sent him to the pest-hospital; he died in the evening.

the remedy would succeed ; and as to the rest of the patients under my charge, with the exception of those already convalescent, they were so excessively exhausted, that I should have apprehended so sudden and powerful a shock might have extinguished any remaining sparks of life ; and accordingly in those cases it was not applied.

The following striking instance of the good effects derivable from the application of cold water by immersion occurred in the Lazaretto. One of the patients labouring under a most unpromising disease, and in the furor of delirium ran out of his apartment, and precipitated himself into the sea. He was immediately taken out, and conducted back to his chamber ; but no sooner replaced, than he took an opportunity of repeating the same rash act. To the unspeakable surprise of all who had seen his deplorable sufferings before the immersion, he became almost immediately convalescent, and recovered. This case, from the distinct account which I received of it, was not less

fitly adapted to the remedy than that of Daniel Boan, already related.

These facts seem to me so very decided as to justify a fair presumption that the cold affusion*, if applied *at the very commencement*, in such forms of Plague as bear the nearest resemblance to the fevers in which its use has been found most successful, might prove a valuable expedient in assisting to cut short their progress; that is to say, when the heat of the body considerably exceeds the natural standard, either as indicated by the thermometer or the feelings of the patient, and when there is, at the same time, so great an increase in the force of the circulation as to warrant the expectation of a vigorous re-action. To those, therefore, who

* I find it stated in Dr. Currie's observations on this remedy, that he had communicated his notions on the probable advantages to be derived from the cold affusion in the Plague to the benevolent Howard, and that it was the intention of the latter to have fully investigated its merits on his next visit to the East. But, unfortunately, he did not live to effect his intention.

may hereafter have proper opportunities, I cannot but recommend that this remedy should have a fair trial, especially as all other means have been of so little efficacy, and as this one appears particularly adapted to the treatment of a disease, the progress of which is so rapid, while, at the same time, it can be so easily and so readily employed.

Whilst looking over the foregoing cases of Mr. Stafford's, previous to their being copied into this volume, I was so much impressed with the clearness and candour of his statements, that I own myself inclined to believe that mercury might, under proper direction, become a remedy of considerable power, if employed at the first accession of the symptoms. Nor is this opinion materially weakened by the numerous failures recorded by other writers, as it seems to me probable that the remedy has seldom been tried under circumstances so peculiarly favorable to its success, as under this gentleman's care at Malta. It is, I will allow, not unlikely, that in some of the thirty or forty

cases of axillary bubo which he alleges having cured by mercury, several might have arisen from external injuries or other ordinary causes, but it is not to be presumed that he should have been deceived in the character of them all, nor that swellings of this description should have been of so much more frequent occurrence whilst the regiment was infected, than at any former time, did they not proceed from the cause so universally prevalent. In whatever way Mr. Stafford's success is to be accounted for, we must, at least allow, that the facts which he has advanced are too important to be overlooked.

In respect to some of the various remedies of which a report has been given, on the authority of the Maltese, I cannot help expressing my belief, that the information communicated to me was much more the result of their speculation than practice. Zealous as these gentlemen may have been to improve their opportunities of investigating what medicine could accomplish, there were

certainly few facilities afforded for applying their skill and talents with effect, as patients were not placed under their care, in the greater number of instances before the golden moments had passed for rendering them any successful assistance. And in a disease where the maxim "venienti occurrite morbo" applies with such peculiar force, it is evident that this delay in sending patients into hospital, must have been completely fatal to the object of appreciating the efficacy of any remedies.

For a more circumstantial account of the treatment adopted with the patients immediately under my own care, I must refer to the cases cited underneath, and which I copy from my note-book without commentary.

Memorandums of Cases in the Military Pest Hospital, under charge of Dr. Faulkner, Physician to the Forces, A. D. 1813.

DANIEL BOAN, æt. 22, a very stout man. Admitted into the pest-hospital, 4th July. Was taken ill on the 3d. Previous to removal out of his barracks, complained of

headach, and want of appetite: tongue white; some appearance of inflammation below the inguinal glands, on one thigh, attended with stiffness; sleeps ill; belly costive; pulse accelerated; eyes suffused. Had an emetic of ipecacuanha and tartrite of antimony, before removal out of the barracks, and two drachms of the aq. am. acetat. every three hours, barley-water acidulated with lemon-juice for common drink, and a mixture of cream of tartar to open his bowels. The skin, which was hot and dry, was directed to be sponged with vinegar and water frequently.

Die 5.—Bubo, (described above as inflammation below the inguinal glands) more painful; an appearance of great distress in his looks.

Si venter non solvitur, hac nocte habeat pulv. rhab. gr. xx. et calom. gr. iv. Perstet in aliis.

Vespere.—Bowels still bound; pulse quick; appetite much impaired; thirst considerable; has had no sleep; was subjected to the cold affusion this forenoon, from which he states he felt himself greatly relieved; still a look of great distress in his countenance.

Appr. vesicatoria abdom. inferiori et temporibus; item hirudines iv. temporibus. Perstet in aliis.

Die 6.—Has had two stools in the night; perspires freely ever since the affusion; thirst more moderate; slept better; appetite still deficient; on the whole, much improved.

Habeat vinum rubr. Port dict. cum sago mixtum pro diæta. Capt. spt. æther. vitriol. semidrachmam bis die. Acid. muriat gtt. x. quater in die. Appr. cataplasma emolliens buboni. P. in aliis.

Vespere.—Seems to improve; has had no stool since last night. Mane habeat solutionem supertartrit. potass. ut supra.

Repr. cataplasma emolliens. Habeat aq. ammon. acetat. drachmas duas tertiis horis. Continued the sponging his body with tepid vinegar and water; barley-water freely given for common drink, acidulated with a very small quantity of lemon-juice.

Die 7.—Much improved; swelling and inflammation of femoral glands disappearing. Applied a discutient lotion to the bubo; was directed a glass of red port wine three times a day, and to go on with his other medicines.

Was removed into another chamber, after being thoroughly washed and shifted. Under the use of these remedies, he continued convalescent, and in a few days was gradually restored to his original health.

ANDRICK. æt. 38, of a weakly constitution.—Received into the pest-house on the evening of the 8th July, about six o'clock, when he could give no account of himself. No case was sent by the surgeon of his regiment.

Soon after admission, had an emetic of ipecacuanha and antimony; was directed to have sago and beef-tea for diet, and acidulated barley-water for common drink.

Die 9.—Continues in the same state, and senseless as on admission; has a large swelling in the femoral glands of one thigh; bowels rather purged. Port wine added to his sago, in very small quantities. Directed to take a table-spoonful or two occasionally, of the M. cretacea of the L. P. and ten drops of muriatic acid three times a-day. The body ordered to be frequently sponged with vinegar and spirits of wine, and a repellent lotion to be applied frequently to the bubo.

Vespere.—Symptoms aggravated, and the state of coma

more fixed; purges much; has a very pale cadaverous look; The lemon-juice ordered to be left out of his common drink, and blisters to be applied to his temples and lower belly.

Die 10.—Nearly in the same state; is still much purged; about thirty drops of laudanum added to a seven ounce and half mixture of M. cretacea, with a little aromatic confection, and of this, two table spoonfuls were directed three or four times a-day. The small quantity of port wine and muriatic acid were likewise continued as before, and an emollient cataplasm put to the bubo.

Vespere.—Little change; if any difference, he appears rather easier. Perst.

Die 11.—This morning there is a great depression in his looks; could not give any account of his sufferings, but seems to point at a pain in the region of his stomach and belly, which causes his uneasiness. Passed two worms of the round kind. Hot fomentations were immediately ordered to be applied, with directions to omit the wine and chalk mixture, should the pain continue. In an hour or two afterwards, I found him *in articulo mortis.*

Peter Webber, æt. 43, a stout man. July 20th.—Admitted into the pest-hospital, at six o'clock, P. M. The following case was sent me of this man by the surgeon attached to his regiment.

" July 20th, 5 min. before 12 o'clock.—Complains of headach, and has the femoral glands of both thighs swelled; tongue foul; some appearance of stupor in his countenance. At the examination yesterday evening, and this morning, there was nothing observable in this man to lead to a suspicion of his

having the Plague. He had no stool for two days previous to his attack. When he reported himself unwell, he would not admit that there was any pain or uneasiness in the swellings under his groin, but complained very much of thirst. Leeches were directed to be put to his temples, but they could not be had in time, before his removal to the pest-hospital. Was directed an opening mixture of cream of tartar; small doses of the aq. am acetat. and acidulated barley-water for common drink."

On admission into the pest-hospital, all the symptoms were greatly aggravated; leeches were immediately ordered to be put to his temples, and soon after blisters.

Die 21.—Much delirium, and wild staring look of the eyes, accompanied with voracious appetite, manifested in the avidity with which I found him devouring a piece of bread given to him by one of the attendants; much purged; the leeches had drawn but little blood; a cataplasm was immediately applied to the buboes, and a trial given to the cold affusion.

The following directions were left with the medical attendant:

Habit acid. mur. gtt. x. quater in die. Omittr. mist. supertart. potassæ, et si purgatio continuetr. habeat mist. cretaceam sæpius. Post affusionem appr. vesicatorium abdom: inferiori. Diæta sit jusculum tenue, sago, et aq. hordei.

Horâ primâ, P. M.—Has continued all the morning in a most furious delirium; tore off his blisters; not purged at present. Omitt. mist. cretacea. No particular effect produced by the affusion.

Adde aq. hod lb. i. nitri purificat. semi-drachm; pro potu.

Continued in the same state until his death, at twelve o'clock at night.

YANIWICZ, about 30 years old, very healthy and vigorous.—Admitted into the pest-hospital, on the evening of the 21st July, at half past seven o'clock, with buboes and a carbuncle situated inside one of the glutæus muscles.

From the case sent by the surgeon, it appears this man had buboes in each groin, and a slight diffused swelling in the lower glands of the left thigh, red and inflamed; had symptoms, as the surgeon thought, of gonorrhœa, which he discovered four days previously, but concealed; was in hospital two years ago, with venereal complaint, since which, he affirms, he has not exposed himself in any way to that disease.

At entrance into the pest-house, was ordered beef-tea and sago, with acidulated barley-water, for common drink. Two grains of calomel were likewise directed night and morning, and two drachms of the aq. am. acetat. every third hour. The medical attendant resident at the pest-hospital, was directed conditionally, *i.e.* if the symptoms should grow worse; to give an emetic of ipecacuanha and antimony, to put blisters to the lower belly, smeared with mercurial ointment, and to apply emollient poultices to the buboes. The blisters were directed to be smeared, proceeding on an idea, which obtained some credit among the Maltese, that a salivation would be more readily produced *.

Die 22.—Says he feels more comfortable, and that the pain of the buboes is not so great; tongue cleaner; not so

* I have to apologize for the mistake at p. 245, respecting my employment of mercury. I had not looked over these cases when the passage was written. The total failure of the medicine in my hands must account for no trace of my having exhibited it being left on my mind.

much thirst; the blister was not applied. Adhibeatur frictio lenis cum aceto et alcoholi per totum corpus sæpius in die. Perstet in aliis.

Vespere.—No visible alteration. Perstet.

Die 23.—Represents himself as better; a wild intoxicated cast of countenance, yet without any incoherency in speech. Blisters were applied to his temples, and to the nape of his neck, and a glass of port wine given to him three times a day.

Vespere.—The carbuncle much inflamed. Perset.

Die 24.—Lost about five ounces of blood by the leeches; was delirious in the night; had four stools yesterday. Appr. vesicatorium abdomini inferiori hydrarg. unguent. fort. illitum. Omittr. jusculum et vinum.

Vespere.—Has had three stools in the course of the day; considerably delirious. Barley-water was ordered to be given abundantly for common beverage, and a blister to be put to the fore-part of his head.

Die 25.—Very delirious in the night; broke the windows of his chamber; has had four stools since yesterday; does not complain of thirst; tongue cleaner. Perst.

Vespere.—Much purged. Omittr. aq. am. acetat. et habeat mist. cretac. unciam: ter die, item camphoræ gr. v. ter die.

Die 26.—Has had four stools to-day; is very incoherent at present; was extremely delirious in the night; in other respects nearly the same; has torn off all his blisters. Perstet.

Vespere.—Is nearly in the same state as this morning. Perstet.

Die 27.—Is not quite so much purged this morning; continues in the same state of delirium, and will not allow the blisters to remain on. Perstet.

Vespere.—Seems rather more distinct; has had but one or two stools to-day. Perst.

Die 28.—Is able to give some account of himself; was however delirious in the night. Perstet.

Die 29.—Seems a good deal improved; carbuncle in a state of sphacelus; belly almost natural. Habeat cinchon. pulv. drachmas duas ter in die; acid. muriat gtt. x. ter die.

Vespere.— Goes on to amend. Perst.

Die 30.—Nearly in the same state; the carbuncle was scarified, and digestive ointment applied to it.

Vespere.—No alteration in the symptoms.

Die 31.—Complains of being much purged last night which he ascribed to some camphor; carbuncle sloughing. Camphor omitted.

Die Augusti 1.—Not quite so violently purged. On looking accidentally into the hospital-mate's prescription book, I observed that one drachm of camphor, and four ounces of oil of turpentine had been directed for the carbuncle, which, upon inquiry, I found the attendant had administered *internally!* This will fully account for the purging on the 30th and 31st.

Vespere.—Purging moderated; in other respects seems in a favourable state. Perstet, et habeat sago pro diæta.

Die 2.—Purging nearly ceased; says he slept well last night. Perstet in medicamentis ut heri; was conditionally ordered a drachm of bark three times a-day, provided the purging did not threaten.

This treatment was persevered in for a few days, and he became completely convalescent

DRUMMER GISLER. æt. 21, very stout.

The following case of this man was sent by the surgeon:

July 23.—" A tumour apparent in the inferior inguinal glands of the right thigh, accompanied with considerable pain; says he felt the pain at last evening's parade; headach better since the morning; tongue rather foul."

Removed to the pest-house at Floriana, about half past seven o'clock, P. M.

On admission into the pest-hospital, was given eight grains of calomel, and fifteen of jalap in my absence; had plain barley-water for common drink.

Die 24.—Had three stools in the course of the night; countenance much flushed; six leeches were immediately ordered to the temples, and about two drachms of the aq. am. acetat. every third hour.

Vespere.—About half past three o'clock rushed out of his room in a high delirium; only about six ounces of blood could be taken away by the leeches; is much purged; a blister was ordered to the nape of the neck; and, if the delirium should increase, one also to the forehead.

Die 25.—Very much purged; high delirium; great thirst; tongue white; a blister was directed to be applied over the crown of the head; and five grains of camphor, dissolved in olive oil, to be given three times a day; an emollient cataplasm was put to the bubo; and he took a small quantity of the chalk mixture to stop the purging.

Vespere.—Has had five stools to-day; bubo very large; complains of great pain in the head; the blister was not applied to the head yesterday.

Die 26.—Died in convulsions, about eight o'clock, A. M.

ODIN. æt. 37, of a weakly habit.

The following is the case of the patient, as furnished by the assistant-surgeon.

25th July, 1813, one o'clock, P. M.—" Complains of headach and thirst, which he says were preceded by shivering; ascribes his illness to the cold air of the guard-room; slept ill on the night preceding; skin hot; eyes rather suffused; tongue foul; has had no stool to-day; has taken an ounce of Epsom salts, which he vomited almost immediately, and without producing any effect in opening his bowels; states he had intermittent fever in Sicily a year ago; abour four o'clock there was an appearance of redness in the left groin, but without any visible swelling; had an emetic about half past four o'clock.

" Die 26, horâ 6tâ, A. M.—Is considerably better; does not complain of any pain in the groin, but there is an evident swelling where the redness had appeared, attended with inflammation; tongue rather foul; seems feeble; removed to the pest-house at Floriana 12 o'clock this forenoon."

Horâ 12 M.—This patient walked to the hospital, refusing to be carried on a hand-bier, of which he expressed a great horror. Since his admission into the hospital, appears very ill; has had an opening mixture of cream of tartar, his bowels not being free for some days. Two grains of calomel, and two of antimonial powder, were directed to be given every four hours. Ordered two drachms of the aq. am. acetat. every third hour.

Vespere.—Continues in the same state. Perst.

Die 27.—Has had two stools to day; complains of great thirst; has been in a state of low delirium since yesterday, after admission into the pest-hospital; is very much debilitated. Perstet in medicamentis; habeat jusculum tenue pro diæta.

Vespere.—Is nearly in the same state as this morning. Habeat camph. gr. v. ter die. The attendant says he passed something like corrupted matter, mixed with blood, in his stools.

Die 28.—Died this morning at half past six o'clock. The whole body was of a bluish cast after death; the bubo never tended to suppurate. The same state of low delirium that succeeded his admission into the pest-hospital, continued until death. He never mentioned any particular complaint, or expressed any pain.

KONOBLESKY, æt. 26, stout.

The following case was furnished by the surgeon:

23d July.—"Has an evident florid tumour, first discovered yesterday evening, in the inferior inguinal glands of the left thigh, and a carbuncle, situated in the middle of the tibia. He complained also of head ach this morning, which has been relieved by bleeding from the nose; tongue rather foul; symptoms continued much the same when he was removed to the pest-hospital at Floriana, about half-past 12 o'clock, M."

Die 23.—On admission into the hospital, the following directions were given:

To apply a repellent lotion to the bubo; to give two drachms of the aq. am. acetat every three hours; and two grains of calomel night and morning; to drink copiously of barley-water; and to confine himself entirely to weak beef-tea for ordinary diet.

Die 24.—Had two stools this morning; tongue not very foul; is not much altered from the state he was in yesterday. An emollient poultice was directed to the carbuncle; and the other medicines to be continued.

Vespere.—Two passages by the belly since last night; same appearances of countenance. Abrad. capillitium et appr. vesicatorium occipiti; omitt. jusculum; perst. in aliis; capt. camphoræ, gr. v. ter die.

Die 26.—In the same state nearly. Last night he ran out of the hospital in a high delirium. Had four stools to-day.

Vespere.—Perstet.

Die 27.—Has torn off all his blisters, and continues still very delirious. Perst. ut antea.

Vespere.—Not so well. P.

Die 28.—Seems rather more composed and distinct this morning, and was able to communicate that he slept some in the night, and had two stools. Habeat acidi muriat. gtt. x. quater in die. Has a look of much anxiety and depression. Habeat vin rubr. cyathum ter in die.

Die. 29.—No change. Perst.

Die 30.—Carbuncle has begun to slough; some digestive ointment was ordered to be applied to it. Appearance of countenance more settled.

Die 31.—Most severely purged in the night. On looking into the prescription-book of the hospital mate, I observed the same application for the carbuncle as ordered for Yaniwicz above; viz. four ounces of oil of turpentine and one drachm of camphor.

Vespere.—Continues still much purged, and complains of great griping and uneasiness about the belly.

Die Augusti 1.—I found the same mistake had been committed as in the case of Yaniwicz, and that the oil of turpentine and camphor had been given internally.

Die 2.—The purging moderated, and he feels much easier. Cont. medicamenta ut heri. Habeat cinchonæ

drachmam unam ter die; omittendo tamen cinchonam et vinum, si purgatio minitet vel dolor abdominis.

Vespere.—Ulcer more healthy; bubo opened this morning, and discharges freely. These medicines were persevered in, and, in the course of a few days, he was restored to a perfect state of convalescence.

Nicola Seiler. æt. 26, of a vigorous constitution. The following case was furnished of this man's disease:—

11 o'clock A. M. 28th July, 1813.—"Complains of headach, thirst, want of appetite, an inclination to vomit, and pain in the limbs; says he felt headach yesterday evening, and vomited this morning. Tongue a little foul; skin hot; had an emetic of ipecacuanha and antimony, and a large quantity of rice water for beverage.

"29th, morning.—Headach and thirst increased; no stool yesterday; complains of a pain in the right axilla; but there is no perceptible swelling; had leeches to his temples; and took an ounce of Epsom salt; succeeded in obtaining two dejections, and about 10 or 12 ounces of blood.

"At half-past 12 o'clock.—Says he feels no pain of head or any other part of the body, the axilla excepted, in which there is a very slight swelling. Put a stop to the hæmorrhage, which it was found difficult to do from the largeness of the leech bites. Repeated the aq. am. acetat

"30th July, about 5 o'clock, A. M.—Said he slept well; no head-ach; scarcely any pain in the axilla, nor in any other part of the body. Swelling in the axilla not increased, and he feels much better in every other respect; tongue white.

" 8 o'clock.—Continues the same."

Thus far proceeded the surgeon's report.

At my visit some short time after this last report, I found the patient in a state of low delirium, and the swelling in the arm-pit increased. Immediately blisters were directed to his temples, which he tore off almost as soon as they were applied. The other medicines were continued. He died in the course of the evening.

After death he was covered with dark-coloured spots of about the size of a farthing each.

Shortly before his decease, about 10 gr. of camphor were administered.

BREGATI, æt. 36, of a weakly habit. The surgeon supplied me with the following case of his patient:

August 2d, 1813, half-past 6 o'clock, A. M.—" Complains of headach, nausea, and some thirst; skin hot; tongue rather foul. Has a carbuncle on the outside of the left leg, and some pain in the left groin, but there is no evident swelling. Has been subject to attacks of fever formerly.

R. Pulv. ipecac. gr. xv.

" 10 o'clock.—Emetic operated, but does not seem to have produced any other effect; much dejection, and apparently confusion. At one o'clock, P. M. applied leeches to his temples, and took the aq. am. acetat. Headach still continuing, about 4 o'clock applied a blister to the temples. Removed to the pest-hospital at Floriana at a quarter before six o 'clock P. M."

Thus far the case as given by the surgeon.

At my visit to this man about 4 o'clock P. M., in company with the deputy-inspector of hospitals, it was agreed

by us, that there was some appearance of swelling on the left thigh, where he complained of having pain. The leeches took away not more than about five ounces of blood.

After the patient's admission into the pest-house, his complaints were of headach, thirst, and debility; he had had no stool since the morning; much appearance of distress and wildness in his looks; tongue foul.

The following directions were given, viz. that he should have plenty of plain barley-water for common drink; that he should have two grains of calomel and two of the pulvis antimonialis every fourth hour; and that his body should be frequently sponged with vinegar and spirit of wine.

Die 3.—Wildness of countenance the same, complains of great headach; face flushed; slept very ill last night; no appetite; great thirst; no stool since yesterday. A blister was directed to be applied without delay to his temples and nape of the neck; and an ounce of Epsom salt to be given, with copious dilution, continuing the other medicines.

Vespere.—Had one trifling evacuation by his bowels about half-past three o'clock P. M. Complains of some pain in the belly; tongue not very foul; seems restless and very confused. A blister was ordered to the lower belly; and a clyster to be thrown up. Instead of the calomel and antimonial powder, two drachms of the aq. am. acetat. were substituted; nitre was added to his common drink in small quantity. Conditional orders left with the hospital-mate, if any pain of bowels should supervene, to apply hot fomentations without delay, and, failing of being able to procure any sufficient relief by the bowels, to give two drachms of the Epsom salt every third hour with plentiful dilution; or if these means should prove insufficient, to give an ounce of

castor oil, and throw up a purgative injection every two hours.

Die 4.—He had 4 stools since 9 o'clock last night, and without the clysters; still complains of pain in the head; much confusion and incoherency; face flushed; tongue not very foul; pain of belly removed; blisters rose well on the abdomen, but not on the temples; they were accordingly ordered again to be put to; an emollient poultice was directed likewise to the bubo, and the aq. am. acetat to be discontinued, if the purging should go to excess.

Was ordered five grains of camphor three times a day.

Vespere.—Passed three stools since morning, great part of which consisted of scybala; vomited the camphor and aq. am. acetat.; respiration hurried; tongue not very foul; great headach; some pain of belly; the camphor was omitted, and some gum Arabic added to his common beverage. The aq. am. acetat. was thrown up, in consequence of which the saline mixture was given in its place.

Die 5.—Had a great many stools since the visit last night; some of them rather copious; appears relieved to day; pulse and respiration still more hurried; great anxiety in his looks; complains now of no pain in his bowels; thirst great; slept a little in the night; the bubo causes much pain though not large. Was ordered five grains of camphor three times a day, and the muriatic acid as before. An emollient poultice was put to the bubo.

Vespere.—This evening is very restless and delirious; tears off his blisters; oppressed with constant nausea and retching; a blister was put to his forehead, repeating the saline mixture and camphor as before.

Die 6.—Very delirious in the night; tongue not very foul;

will not drink his barley-water; expresses great distress from the pain of the bubo; affected with a degree of tenesmus. The muriatic acid was omitted.

Vespere.—Has had a great many trifling evacuations by stool. About 8 o'clock P. M. he died.

After death his lower extremities were all equally of a motley bluish cast, with some small petechiæ over his breast and arms. The bubo was completely stationary for some days previous to death. The tongue, though whitish, was remarkably clean throughout the whole of his illness.

N. B. This patient complained of a great pain in his throat, which prevented his being able to drink, although he called for it with great avidity.

In conclusion, let it be observed that, for the reasons assigned *(passim)* in a former chapter, I have purposely abstained from entering into any speculative disquisitions on the theory of this disease, or its place in the nosology, convinced, that until we shall have acquired a more distinct and extended knowledge of the phenomena, with their dependencies, and of the effect of remedies, any such attempt would be productive of no advantage. Indeed, I very much doubt whether, in most cases, the advantages arising, in poitnt

of practice, from nosological distinctions, are not more than counterbalanced by the tendency which such distinctions have to repress the investigation of facts, and to perpetuate errors under the imposing sanction of their inventors.

That the Plague arises from the absorption of a specific poison, I cannot see how a reasonable doubt can exist in the minds of any who have paid even a superficial attention to the symptoms. Of the whole number who passed through the disease in Malta, I believe it is understating the fact, to say, that at least two-thirds were affected, more or less, with inflammation or tumefaction of the glands, or lymphatics. Nor do I conceive it sufficient to set aside this view of its mode of production, that sometimes no traces of such inflammation or tumefaction were to be detected before death; for in a disease which runs its course with such singular rapidity, it may happen from the sudden and strongly sedative impression which this contagion may be peculiarly fitted to exert on the brain and nerves, that the powers of life become

too exhausted for the usual lymphatic or glandular excitement to be produced before the fatal event takes place; in proof of which we know that in some other diseases confessedly arising from contagion, the brain and nerves, or stomach, are violently disturbed, or even death itself ensues before the least appearance of the specific eruption is discernible. That the eruption of buboes should proceed, as some have contended, from an effort of Nature to expel pestilential matter, seems very improbable for this plain reason, that in the Plague, not less than the venereal disease, their retrocession is often perfectly harmless. When, therefore, death follows the retreat of these swellings, we may fairly conclude that it is not owing to the retention of matter which required to be expelled, but that is the consequence of such a depressed state of the *vis vitæ*, as in the worst cases prevents their coming out altogether. Did the production of these tumors bear any proportion to the violence of the disorder, there might be some colour of

probability for regarding them as critical separations of morbid matter. On the contrary, they often appear at the very commencement (as occasionally has happened in respect to the eruption of measles and small pox) without being preceded by the least degree of fever, or any other symptom of morbid derangement.

THE END.

The reader is requested to observe, in reference to the errata and obscure passages in the following evidence that I have not felt at liberty to make any alteration from the impression printed by order of the House. In the present copy there occur, I believe, but two mistakes which are departures from the original, viz. at p. 19, *l.* 5, *where* considerably *is put for* inconsiderably, *and at p.* 39. *l.* 17, aptitudes *for* aptitude. *One of the most obscure sentences will be found at p.* 20, *l.* 4, *in which it was intended simply to observe, that so far from there being any thing remarkable in the state of the public health, or in the climate previous to the Plague, the very reverse was the subject of general remark. Other minor inaccuracies are plainly oversights of the copyist.*

For such defects of expression, &c. as are strictly chargeable to myself, I can only urge the considerations stated above at p. 12 *of my Letter to the College, and that when evidence is noted by the short-hand writer, not the most trivial inadvertency can escape being recorded—"Semel emissum volat irrevocabile."*

APPENDIX,

Containing Minutes of the Author's Evidence,

BEFORE THE

Select Committee

OF THE HOUSE OF COMMONS;

Appointed to consider the validity of the doctrine of Contagion in the Plague.

TOGETHER WITH THEIR

REPORT.

ORDERED, BY THE HOUSE OF COMMONS, TO BE PRINTED, 14 JUNE, 1819.

Jovis, 25° die Martii, 1819.

SIR JOHN JACKSON, BARONET,

In the Chair.

Sir *Arthur Brooke Faulkner,* called in; and Examined.

STATE the opportunities you had of considering the Plague, and the nature of contagious distempers in general, in the course of your practice?—The only opportunity I have had of seeing the Plague was in the Island of Malta.

On what occasion?—In the year 1813.

When the Plague prevailed?—When the Plague prevailed in the island.

What situation at the time did you hold?—I was physician to the forces. I was the only staff physician employed during the greater part of that service.

Was you there at the time it broke out first?—I was.

And attended as a medical man during the whole course of it?—Not during the whole course. I did not attend

officially until the army became infected. I was not permitted when the natives only were infected.

But you was present?—I was present during the whole period of the Plague*.

And practised as one of the principal men of the army?—After the army became infected, I practised as physician to the forces.

What is your opinion respecting the mode in which the Plague, in general, is generated and communicated?—I believe it is generated or produced by a contagion, *sui generis* quite peculiar and specific, and that it is communicated only by contact or close association with the person or thing infected.

What are your reasons for believing that it is communicated only by contact or association, and not by a certain state of the air?—My reasons are drawn from the course the Plague took from its first entrance into the Island of Malta, until its cessation. It was communicated in the first instance in the direct line of contact. It could be traced to have been propagated in the direct line of contact, in the city of Valetta, and from the city into most of the casals or villages, where any history could be obtained of its introduction.

Will you have the goodness to state the instances of its

* *i. e.* in Malta. Gozo continued to suffer after I left the Mediterranean.

communication by contact, during your own experience at Malta, from your own knowledge?—The first case of the communication of the Plague was, in my opinion, from a vessel, the San Nicolo, in the harbour, to the family of a person of the name of Salvatore Borg.

The vessel lay in what harbour?—It was lying in the harbour contiguous to the city of Valetta; the harbour is called Marsamuchet.

State the circumstances?—To prove that it was from this vessel the infection was received, I shall crave permission to read a letter addressed by myself to the governor. I am not quite sure of the verbal accuracy of the letter. After the vessel arrived in the harbour in March, the town became extremely alarmed, and, among the rest, myself. I understood, but this I cannot pretend to vouch for, that several merchants had remonstrated against the vessel remaining in the harbour. Participating in the common alarm, I thought it my duty, though not called upon in my official situation, to represent the consequences that appeared inevitable in permitting the ship to lie there; and, therefore, though not solicited, I communicated the following letter to the governor :*

Go on with your detail?—My apprehension of the disease finding its way into Valetta, from the lazaretto and Plague

* See this letter, p. 15.

ship, arose from my knowledge that the persons appointed as guardians, were taken from the lowest part of the community, and paid, as it appeared to me, very inadequately, somewhere from one shilling and sixpence to two shillings a day; and having recollected from reading the history of a Plague that visited the same Island in 1675, that it crept on shore from an infected vessel unobserved, I thought I was justified in entertaining the same fears on the present occasion. Accordingly on the 16th of this month, six days after this letter was presented to his Excellency Lieut.-Gen. Oakes, the first infected case occurred in the town of Valetta; it was the case of the daughter of Salvatore Borg. She died with well marked symptoms of the disease, I think on the 19th April. Two other persons of the same family died on the 2d May, all with well marked symptoms of the disease.

Will you trace the communication between them and the vessel?—From the family of Borg it made its way in a direct line into the family of one Maria Agius, a school-mistress, who, together with others she immediately communicated with, were attacked by the Plague, and all of whom (with some of her scholars, I heard) were seized or perished with well-marked symptoms of the disease. I ought to revert to that part of your inquiry, which is of most consequence, namely, the communication between the vessel and

the town of Valetta. I hold it as hardly requiring proof, that the disease should have found its way from an infected ship in the harbour, when I consider the apparent connexion between the cause and effect, arising out of the arrival of the vessel, and the almost immediate verification of my prediction to the governor; and recollect besides, that the island had not been infected for 130 years before. I consider these circumstances as conclusive. But, in the next place, some new linen was discovered in the house of Salvatore Borg, which was confidently rumoured to have been brought from the infected vessel; and it was further stated, but of this I have no certain authority, that when the vessel returned to Alexandria, the infected place from whence it came, there were some bales missing.

Have you any reason to believe that the family infected, among whom the disease broke out, had direct communication with the ship; and what means have you of knowing it? —When I consider what appeared to me the imperfect state of the quarantine system at Malta, I can only say, I think it an event not improbable, that some of the family might have got goods from this vessel *.

Can you state that any communication took place, and what, between the family of Borg and the family of Maria

* See Dr. Granville's statement above. p. 60.

Agius, where the disorder next appeared?—The families of Maria Agius and Borg were intimately acquainted with each other, and she was constantly employed in relieving the afflictions of the latter, when taken ill of the Plague.

From the family of Agius could you trace the progress of contagion to any other family?—For my own part I dropped the inquiry there;* the *foci* of contagion became so rapidly multiplied, that it appeared to me impossible to carry the investigation in a direct line further in that populous city; but I am in possession of documents furnished to me by one of the captains of the lazaretto himself, a man of strict integrity, and many years employed in that official situation, showing, that the contagion made its way in a direct line from Valetta into most of the infected casals or villages; these documents I can produce if required. In the next place, in pursuing the course of the disease by contagion, I should beg leave to remark, as a very important circumstance, that the means of its communication to the small contiguous island of Gozo, at a late period of the calamity, can be distinctly made out. A man belonging to an infected family in one of the casals, made his escape with a box of clothes into a neighbouring cottage; it was speedily found out that he had escaped, and he was accordingly apprehended and sent to the lazaretto.—

* By the Government Journals of Malta I have been enabled to trace the contagion still farther, as stated above, at p. 61 *et seq.*

On his enlargement from the lazaretto, he returned to his cottage, where he took this box of clothes that had never been suspected to be there, but had been concealed; and he hired a boat, and carried this box of clothes to the island of Gozo. The first family infected on the island was the family at whose house he arrived, and to which place he carried the box of clothes. It was a marriage present, I understood; and a priest acquainted in the family was one of the first victims; he died with well-marked symptoms of the Plague. I have not had it in my power to trace the direct communication further.

Did the individual who conveyed the clothes take the Plague; was he himself infected? – I am not prepared to answer that question, but I rather think he was; many persons were not infected by the disease, that were taken from the very bosom of those families, who all died of it.

Do you happen to know whether this person had communication personally with the individual who took the complaint, as well as by giving the goods?— He lived in the family; there was a marriage about to take place, or had taken place, in it.

How long after he got this box of clothes was it before the disease broke out?—Within a short time.

What length of time were the clothes locked up in the box, between the time of their being infected, and the box

being opened, and the clothes given to the people in Gozo? —During the term of his quarantine, I believe somewhere about twenty days; I am not quite prepared to answer when it was opened. All I can say is, that the box was carried by this man to a cottage,* and was concealed from those who went to take him to the lazaretto.

Do you know whether any person in the cottage, where the box was deposited, took the Plague?—I cannot answer that question.

Do you know whether there was any communication, any thing that could have conveyed the disorder from the ship San Nicolo to the family, except the linen?—I am not aware of any thing; I rest my whole evidence on what I before specifically stated, namely, the tendency of the disease to propagate in a direct line, and the circumstance of my prediction being followed in four or five days by its consummation, and the collateral consideration of the island not having been infected with the Plague for an hundred and thirty years.

And you conceive that to have been a sufficient cause to account for the propagation of the Plague?—I should think so. I beg to be understood in giving this evidence, that I was not present myself, and therefore I cannot speak with

* *i. e.* near to the infected casal.

confidence as to the linen being found in Borg's house; I did not see the linen myself. As to the other circumstance of the disease propagating in a direct line to the casals, I had the documents from one of the captains of the lazaretto.

You have stated, that in the family of Borg, and in that of Maria Agius, the schoolmistress, and also in the family in the island of Gozo, the different individuals died with well-marked symptoms of the Plague; do you state the well-marked symptoms of the Plague to have appeared, from your own individual knowledge, or from information derived from others?—From information derived from others. With respect to the first case, I had official information communicated by the head of my department, I received an official letter from him on the subject. With respect to Maria Agius, it was a fact so notoriously known, that I apprehend any evidence on this point would be unnecessary. With respect to the infection of the casals in a direct line, my evidence, as I have stated above, rests on the written statement of one of the captains of the lazaretto, employed in the service during the Plague of Malta.

Is he a medical man?—No; it is not necessary he should be so to fill that office.

With regard to Gozo?—With respect to Gozo, I have the information of some respectable authority *, but I do not

* From the Captain of the Port, and others, together with current public testimony.

recollect his name; it is, however, a well-known fact.

Then, in point of fact, not one of these cases, in which you state the symptoms to have existed, was from your own personal observation?—Not one. I was not officially employed; I offered my services in the native hospitals; but they were not received, on this ground, that they might be wanted for the army.

Had you any intermittent or other fever at Malta, during the Plague?—I had none under my own immediate eye or care; but I understood there were a few, and those very mild, principally occurring, or, indeed, altogether occurring, towards the autumn *, or the latter end of the year 1813; but as I have not seen any of the cases, I can only speak from hearsay.

Did those instances occur before the Plague broke out?—They had, I understood, been occasionally numerous in preceding years.

The instances you state to have prevailed before the Plague broke out, were they the marsh fevers?—I am not aware that any had occurred the year before; *i. e.* I cannot specify, myself, on my authority, that any occurred the year before; but I understood that they were of frequent occurrence in every year.

* This will be found more accurately stated above, when treating of the supposed pestiferous power of marsh miasma.

Was the Plague particularly prevalent in the places where the marsh fevers prevailed?—Not at all particularly prevalent where the marsh fevers were most generally produced.

Is there any similarity between the marsh fever in Malta and the Plague;—I never could trace any series of symptoms that could lead me, in the slightest degree, to suspect any identity between them; but I have known the Plague to personate in certain symptoms in almost every possible form of fever, and I have known it to be entirely free from every kind of fever; there is no certain type to which it can be affixed.

Do you mean to say, that there is no distinct symptom that marks the Plague as distinct from every other fever?—I do mean to say, that fever is not an essential attribute of the Plague; it is frequently mortal where there is no fever. It is an extraordinarily anomalous disease, which defies, (I should rather say, has almost defied) definition. Dr. Cullen, I conceive, has defined it best; but even his definition is not a correct one. In fact, I may say, it has hitherto baffled nosologists scientifically to define it.

Are there not symptoms that distinguish the Plague, in a manner which cannot be mistaken?—There are symptoms which are sometimes called characteristic symptoms, but they are not constantly present. The most frequent and constant symptom was a peculiar cast of the eye, and a certain appearance of the tongue; the eye had the appearance

described by Russel, of a muddy dull colour; I believe that to be the most frequent and most characteristic symptom of the Plague. As to buboes, carbuncles, and appearances of the skin, they are not constant. In many of the most fatal cases, the patient perished before the buboes or any other eruption made their appearance; many without any other appearance than that of the eye.

What was the state of the pulse?—The pulse had been felt occasionally, through a tobacco-leaf, and was, in many instances, extremely rapid. The fine for feeling a pulse was several days quarantine; if any medical man had felt a pulse, he was subject to this quarantine.

Can you show that prompt separation has been effectual in securing persons from contagion?—I can, in many instances; the instances would be difficult to detail, they are so numerous.

Did the disease extend to Sicily, or the neighbouring islands?—It did not extend to Sicily, in consequence of the prompt precautions that were adopted: and had there been the same at Malta, my persuasion is, that the disease would have been resisted, *in limine*.

Were quarantine restrictions found effectual in resisting the Plague at Malta?—Wherever proper quarantine restrictions were imposed with firmness, steadiness, and promptness, they seemed to be altogether effectual in preventing

the extension of contagion; but the quarantine system * seemed to me so extremely lax from the beginning, for several months, that it would have been next to impossible the disease should not have been widely disseminated through the island. I may enumerate, as instances of this laxity in our quarantine system at Malta, that there was no complete *census* taken of the population, with a view of detecting cases of infection, until, I think, the 19th May, 1813. There was not a complete and sufficient corps of trusty guards until the month of August; the people were not shut up in their houses until, I think, the month of August; that is, not universally shut up, probably partially. It is notorious, that contact constantly took place in the street, previous to the organization of this corps of guards, and the shutting up the inhabitants in their houses; I have official documents to prove all these points I have been just stating.

Was the Plague ever known to be received in the lazarettos?—It has been known; I have heard many instances related to me by the Maltese, and here is evidence of one; I have brought the title-page of a book, which represents a monument raised to the memory of a grand master, for having arrested the disease.

In what year?—1743.†

* This word is taken in a wide sense, and includes the system of Police.

† On looking more narrowly into this document, I find it refers only to the measures which protected Malta when the Plague was raging in Sicily.

Do you know any thing of the introduction of the former Plague, that ravaged Malta, and when did it occur?—I beg to refer to a paper I published on the disease, during my engagement on the Plague at Malta, which was communicated to the Edinburgh Medical and Surgical Journal, and published 1st April, 1814. The passage I wish to read to the Committee, is this: "It is somewhat remarkable, that the history of the introduction of the Plague, when it made such great ravages on the last occasion on the island, about a century ago, was nearly similar to what is circulated of the present; being attributed to some linen brought from a Levant vessel, by a Maltese shopkeeper; which, after producing the disease in all those who first came in contact with it, ultimately disseminated the malady throughout the whole population."

During the late Plague at Malta in 1813, was the disease arrested when the quarantine system was rigidly acted upon?—It was: from the moment that an adequate and a regularly organized police was established, and the inhabitants shut up in their houses, and other strict measures of quarantine enforced, (which was the case at a very late period) in the month of August, the Plague did rapidly decline.

How was the disease stopped at last?—By what I have just stated: by the organization of a sufficient corps of trusty guards and police restrictions, and by shutting the inhabi-

tants up in their houses. I could name a number of other circumstances connected with the means of preventing it.

How were the medical attendants preserved?—With respect to the military hospital, of which I can speak from experience, the hospital in which I attended, (the pest hospital,) they were, in my opinion, preserved by wearing a dress of oiled silk,* which prevented the possibility of any contact of infected matter with the skin, and probably also by its promoting free and copious perspiration, and in consequence preventing absorption.

When was the Plague stopped; at what time?—I am not quite sure whether it was in December.

Can you state when it began to decline?—It began before the month of August.

What do you conceive the hottest period of the year at Malta?—I am not prepared to answer that question; I believe the month of August. I have kept a thermometrical table; but having it only for one year, the results of my observations are probably insufficient.

What was the temperature of the atmosphere at the period when you conceive the decline to have been apparent?—The 16th July appears to be the day when the Plague was at its height, sixty-seven died that day; the thermometer

* A modification of this opinion has been given in a preceding part of this Volume.

was at eighty-one, at four o'clock in the afternoon. In the morning at six o'clock at seventy-seven, and at ten at eighty-one and an half. The next day thirty-six died; the thermometer was at eighty-two, and in one part of the day at eighty-three. On the 18th of the month, fifty died; the thermometer was in the course of the day at eighty-one. On the 29th forty-one died, the thermometer was at seventy-nine. On the 20th of the month forty-three died.

State the period at which there was a sensible decrease? —I think from the 16th of July there was an average decrease, though a very irregular kind of decrease; but the thermometer was rather higher than lower.

How far was the establishment of the police precautions to which you have alluded, coincident with the decrease of the Plague, with the visible decrease of the Plague?—This question requires a cautious answer. The gentleman appointed at the head of the police, begun to organize his system on the 3d July; the disease extended its ravages after he had organized his system in some degree; but was not perfectly organized till the 2d August, *i. e.* it did not shut the people up in their houses, nor was there an absolute prohibition of contact; but as soon as it did enjoin absolute prohibition of contact, and shutting the people up in their houses, the disease declined.*

* See Government Gazette of Malta.

Then it appears the decrease was not very visible till these precautions were put strictly in force?—Not so visible.

State from the period at which they were strictly enforced, namely, the 2d August, what was the average decrease from that time?—On the 2d August fifty persons died, on the 3d August forty-eight, on the 4th twenty-seven, on the 5th forty-seven, on the 6th forty-three, on the 7th thirty-five, on the 8th thirty-seven, on the 9th twenty-four, on the 10th twenty-six, on the 11th twenty-eight, on the 12th twenty-six, on the 13th thirty-one, on the 14th—

Instead of putting the result of every day, look at your table and see when the decrease became considerable?—I have brought it down since the 16th July until 14th August, to less than one-half; I have brought it down to thirty-one instead of sixty-seven, in less than a month.

From the 16th August did it go on gradually decreasing, till it disappeared?—It went on decreasing on the average, but not regularly.

At what period did it finally disappear?—On the 19th October; in my note of this day is stated the last* occurrence of a case of Plague in Valetta.

Did it continue in other parts?—In some of the casals for a considerable time.

* It appears that one of the Third Garrison Battalion was infected on the 23d of October, and was properly the last acknowledged case of Plague in Valetta.

Have you any doubt whatever, that the decline of the complaint was produced by the prohibition of the intercourse among the inhabitants?—I feel satisfied that it was very much owing to the prompt measures of police; and my reason is, that the thermometer rose considerably in point of fact, while the disease was decreasing fast.

Is there any other cause to which you can attribute the decrease and cessation of the Plague?—I really do not see any other cause.

In your observation of the Plague, has it appeared to you that it subsists only in a given temperature, neither in very great heat or very great cold?—During my residence at Malta it did not appear to me that the temperature of the air had any thing to do with it. In my own opinion, I do believe that a very high or a very low temperature would check it.

Will you state the opinion you entertain, from the best sources derived, what degree of heat is not consistent with the Plague?—I can only speak from my reading, on that point. I believe that materially below 60 or probably at 60 degrees of heat it cannot subsist; but it is bare conjecture.

You had never an opportunity of observing the Plague except at Malta?—No.

Was there any thing remarkable in the state of the thermometer at the time the Plague broke out at Malta?—Nothing, I believe.

What was the temperature at that time?—The thermometer, on the day the first case was reported to have taken place, was at 64; that was on the 16th April.

What was the state of health on the island, before the Plague broke out?—To the best of my knowledge nothing remarkable. If there was any thing remarkable with regard to its climate, it was that there was nothing very remarkable, for the people were wondering that there was nothing remarkable in the state of the air to produce Plague; there was nothing anterior to the breaking out of the Plague, at all leading to any reason why it should exist unless by contagion.

At what time did the first case of Plague appear among the soldiers?—Without referring to my official letter I cannot exactly state.

What month was it?—In June*.

Was the soldier who was first attacked with Plague, in barracks or quartered in the town?—I shall be under the necessity of consulting my medical register; but I have no doubt he was in barracks.

Could any communication, personal communication, be traced between the soldier first infected and any other soldiers who were afterwards infected?—I do not know that any had been attempted to be traced; for when soldiers live

* On the 28th of June.

in the gregarious manner they do, it would be in vain to make the inquiry.*

Were the soldiers kept within their barracks, previous to the appearance of the Plague among them, and their communication with the inhabitants prevented?—In some of the barracks it was prevented, in some not; and it is material, in order to prove the contagious property of the disease, that in those barracks where a strict quarantine system appeared to be kept up, the Plague was excluded, though they were in an unhealthy part of the town; whereas in other places that were more elevated and airy, but where there seemed not to be the same precautions observed, the disease was brought in.

Then the soldier first infected was in one of those barracks that had a more free communication with the town; had you the charge of the sick in the barrack in which the first case occurred?—I had partly the charge of them in this barrack, but not in the first case.

When did your charge of the Plague patients commence?—It was relative to that point I wished to consult my register; but as far as I can state with confidence, I was not employed officially to prescribe till De Rolle's regiment was

* On referring to the Medical Reports of Malta, published during the Plague, I have ascertained that those who slept in the same room with the soldier first infected, were the first victims to the complaint in the army.

infected. I think I was called in to see some other cases but I had them not under my charge.

Were you yourself, in attending the sick, (those who were ill of the Plague,) in contact with them?—Personally close to them, as nearly as it was necessary for me to approach them.

Had you the Plague?—I believe not; though I have some doubt respecting that.

Who were the persons employed under you in the care of the sick?—Orderlies and such like.

Did any of them catch the Plague?—Not one.

Were they necessarily in contact with the individuals who had the Plague, and with their clothes and bedding?—Necessarily.

Were any precautions taken with the view of preventing hem from catching the Plague, in the discharge of their duties?—Oiled silk dresses were enjoined by command to be worn by every person in attendance about the sick.

Was it complied with?—It was I believe, in point of fact; they were also enjoined a prompt ablution after touching the infected, they were obliged to wash their hands; in short every means were adopted to prevent their catching the infection, with the addition of ablutions.

Was one of the precautions rubbing the body with oil?—It was; but there are the best reasons for supposing that it had no share in preventing the infection.

What reason?—It had been employed with all the attention possible in the garrison; but yet the disease made its way. It had been employed by those who attended in carrying out the dead, and who I believe almost all perished; there were very few instances of such persons who did not perish.

When you describe the Plague as contagious, do you mean that it is communicated by the breath?—I am not prepared to say whether it may not, by closely inspiring the breath of an infected person; but this in my judgment is a kind of contact. My opinion is, that it is principally communicable by the touch, but I think it can be communicated in the former way also; few would be hardy enough to try the experiment.

If it had been communicated by the breath, how can wearing oil-skin dresses or ablution prevent the breath of the infected persons getting into the mouth or nostrils from the infected?—We know, that at a certain distance in other diseases, the contagion from fomites may be so diluted by the atmosphere as to become innoxious.

Was the progress of the Plague among the troops rapid?—It was not rapid.

Not so rapid as among the inhabitants?—Not at all; in all not above 20 I believe died up to the middle of October.

The progress of the disease I mean ?—In some it was rapid, and in some it was not: there was every variety.

What was the per centage of those in garrison attacked ? —I am not prepared to say.

Was it a greater or less proportion than the inhabitants ? —A less proportion.

The precautions applied to the troops were more rigid than those that could be applied to the population ?—Certainly. I was going on to state some circumstances as to the degrees of precautions used in each of the military barracks. The Sicilian regiment, though situated in a very infected part of the island, a place called Floriana, escaped by the promptness and vigilance of Col. Rivarolla. De Rolle's regiment, which was on the healthiest spot, was invaded by the disease, and evidently in my opinion in consequence of their barrier admitting a contact with persons on the outside. It was a barrier at which you could shake hands with any body on the outside. In the 14th regiment, which was near the most unhealthy part of the town, there was but one person suspected, and his disease was immediately arrested; the public prison * and public general hospital escaped. The convents in Valetta escaped, with the exception, I believe, of one; and the introduction of the disease to that one was

* It appears by the Public Medical Report, that this place was at length infected.

accounted for. The prison and these public institutions escaped, I conceive, very much by the voluntary attention paid by their inhabitants to a strict system of quarantine.

Did the Plague cease in the military hospitals before it ceased in the town?—I am not prepared to answer that question.

Were the soldiers in barracks prevented from holding communication with the town, after the Plague had ceased in the barracks?—I believe so; that would greatly depend upon the commanding officer.

I ask you, whether in point of fact, they were?—Throughout the whole they were interdicted as far as possible; the commanders of regiments issued orders to prohibit intercourse, but they were not strictly obeyed.

Did the Plague find its way into any of the barracks or regiments, where these orders were not strictly observed? It got into De Rolle's regiment particularly.

You have stated, that these three cases of Salvatore Borg, Agius and Gozo, were cases you received from information; now I observe in many cases that came under your own knowledge, it did not communicate to persons; do you not consider that the natural time of the decrease of the Plague is the fall of the year?—It is my own opinion, that it would cease if the temperature was low; I think that the Plague is incompatible with a certain temperature, high or low.

Then it is not the particular period of the year?—No.

You stated it to appear prior to August, but the restriction was not till the 2d August?—Not in its full rigour, but an improved system was acted upon in July.

The ship Nicolo returned to Alexandria with her whole cargo, did she not?—If I may except those bales which were rumoured to be missing.

She was not allowed to land her cargo?—No.

Who navigated her back?—Probably the remaining part of the crew.

Was she not navigated back by Maltese?—She might.

Do you know whether they took the Plague?—They arrived in safety.

Did they who assisted in landing the cargo?—I believe so.

Are there any eruptions in the skin, in the Plague?—If we can call eruptions what are termed blains and carbuncles.

Do you consider a buboe or carbuncle to be an eruption;—I should think so; it is freely applicable to the term; its etymology is from *erumpo*, which is to break forth.

Does not eruption mean a cluster of pimples?—In common acceptation it may.

Do you think the Plague comes under the description of Exanthemata?—I think it does; I believe that Dr. Cullen has given the best account of the disease.

You have stated, that the contagion in Plague is what is

called *sui generis*, do you consider it different from contagion in the small-pox?—Different from any other known contagion.

Have you ever heard of the Plague in England?—I have read of it.

In what year?—The last was in 1665.

Have you ever heard of Plague since?—Never, as imported into England.

Do you consider the Plague can be propagated from goods as well as persons?—I think so.

Have you any reason for thinking why the Plague has not been introduced from goods in the quarantine establishments?—In the first place, quarantine restrictions since 1709 have been a great deal more rigid; indeed they did not exist in England at all, previous to that period. I conceive that the intensity of the contagion may have been greatly blunted by the length of the voyage, and the length of time that passes after the shipment of goods. Besides we know, that other countries have a good system of quarantine, which is in favour of the Plague not being imported here.

Do you consider the Plague of 1665 to be the true Levant Plague?—From the description I have read of it I am inclined to think so.

Do you consider the reason why the Plague has not been introduced in England, has been more from the length

of time in the voyage, than the quarantine establishment? —I mean both conjunctively, viz. the time and the means used to free goods from contagion, and to expurgate infection.

How do you account for the expurgators never having taken the Plague?—I cannot account for that, but by collateral considerations.

What are those?—First. That we have observed, in other countries the disease has not taken place for a long series of years, not for an hundred and thirty years in Malta. Secondly. We do not know what the circumstances are that constitute aptitude in the receiver, sufficiently, to know why the Plague has not been received into the lazarettos since 1665. But Thirdly, it does not follow because it has not been received into the lazarettos since 1665, that it may not by some fortuitous concurrence of circumstances occur again here.

Are you acquainted with the opinion of the ancients, respecting the Plague?—I am. It has been stated, that the ancients were not acquainted with contagion, but I can adduce instances from the medical writers and the poets to the contrary; I can produce instances from both the Greek and Roman writers and poets.

Does Hippocrates mention it?—He does not. He had not the experience to determine the point; but with respect

to the authorities that do speak of contagion, I shall beg to refer to the following, viz. *

(* Here I produced several passages from Aristotle, Aretæus, Galen, Tacitus, Livy, and Virgil, which have already been cited.)

Veneris, 26° *die Martij*, 1819.

SIR JOHN JACKSON, BARONET,

In the Chair.

Sir *Arthur Brooke Faulkner*, again called in; and Examined.

I THINK you wish to add to your answer respecting the air of Malta?—I was observing that a high wind, from whatever quarter it blew, was always accompanied with some increase of the number of infected.

Can you give an undoubted proof of the contagion of Plague, from any fact that came under your own eye or personal knowledge?—At the military barracks I think, certainly.

What was it?—The attacks being *consecutive,** as from contact, instead of being *simultaneous*; it was impossible to trace immediate contact with an infected person in barracks, where soldiers were so much together, and lived so gregariously.

If the air was the general cause of Plague, must not that have operated as the cause, in the instance to which you have alluded?—Certainly not; if the air had operated as the cause, the disease would not have extended consecutively, as I have shewn to be the case, but would have been produced through the corps simultaneously; the same would have happened through the population of the island, especially as there were several parts of the island, from local circumstances affecting the air, more exposed to contamination than Valetta.

Is Valetta a lower part of the island than the other parts?—I am not quite sure respecting that; but it is universally allowed to be one of the most healthy parts of the island, the most free from marsh fevers; and as an instance, I may mention, that in 1801, when marsh fevers were very fatal and numerous, Valetta entirely escaped.

Was there any fever except on board the San Nicolo, at the time?—I cannot speak with positive certainty, but I think it not unlikely, as vessels from Alexandria, an infected

* Vide note, p. 21, app.

port at that time, were not excluded from entering the harbour contiguous to Valetta.

Whereabouts was Salvatore Borg's house?—In Strada St. Paulo.

Is that far from Valetta?—It is in Valetta.

Is Valetta the fort?—It is a considerable and well fortified city, the largest in the island; it is the last spot where one would look for marsh fevers or diseases of any kind, being perflated with pure sea air in every direction, and the soil being perfectly dry.

Would not the numerous instances you have alluded to, of persons having escaped the Plague who had come from the bosom of families afflicted with it, be an inducement, if not a proof for deeming Plague not contagious?—Neither an inducement nor a proof; for we see in other diseases allowed to be contagious, the small-pox for example, that many such escapes have taken place.

Have you any better proof for deeming Plague contagious, than the preceding observation on my question for deeming it not contagious?—I think that when the whole evidence I have given, respecting the propagation of the Plague in a direct line, be well weighed and considered, and when we see that any other supposable cause than contagion is inadequate to account for such extension of the disease in a direct line, the proof is made out as far as presumptive evidence can well render it.

Do you know how many died of the Plague in the harbour?—None in the harbour; two I believe died on their passage to Malta from Alexandria, and two died in the lazaretto after the infected crew were sent on shore.

You know the ship San Nicolo was sent back to Alexandria, without unloading, from Malta?- It was notoriously stated.

And do you know that the goods were landed at Alexandria, and none of the persons took the Plague who went with her?—I believe none of the persons who navigated her back took the Plague, but arrived in perfect health; farther I know not; I know nothing of her unloading; I have said, there was a report that some bales of goods were missed, but I only speak from public conversation.

Is it not more likely that the persons who went with her to Alexandria should have received the Plague, than that a bale of linen carried into Malta from her should have produced the Plague?—The ship had undergone a very considerable quarantine; and I heard that means were taken to prevent her from infecting those engaged in her navigation.

Do you suppose her goods were unladen?—I believe not; in every other respect as far as circumstances would admit, without unlading, I have heard she was expurgated from infection above decks, but I am not certain of this.

Do you believe it would be possible to ventilate the goods without unlading them?—I think it would be impossible.

What number of military were at Malta in 1813?—To the best of my recollection, about four thousand.

What was the greatest number of military afflicted with the Plague, at the same time?—I am not prepared to answer, as the returns of the whole army were never in my possession; but I can speak as to those under my own care; I have the return of them in my pocket: 4th July, the first case was placed officially under my care; the second was the 8th July.

What is the greatest number at any one time?—I beg to read the return; the third case was the 20th July, the fourth case the 21st July, the fifth case the 21st July, the sixth case the 23d July, seventh 25th July, the eighth case is the 28th July, the ninth case is the 2d August; I believe that this is the last officially under my care.

The sick of all the persons were under your care?—Not of all the forces; some of them were attended by their own regimental surgeons within their own barracks; those sick only properly belonged to me officially, that were sent into a general hospital, although I did attend also in the regimental hospitals; we were at one time so ill * off for a general pest hospital, that medical staff officers were under

* This inconvenience was speedily obviated by the appropriation of part of a convent to this purpose.

the necessity of attending Plague cases at the barracks under canvass.

Have you any recollection of the number of soldiers altogether taken ill of the Plague?—In all, our army had not hitherto lost above twenty; up to the date before-mentioned.

What date?—Up to October.

Were any taken ill after that?—I believe some solitary instances occurred after that. We lost very few in all.

Was any medicine administered which was successful in these cases?—Some articles seemed to be very successful, but there could be no dependence placed upon any.

Would you like to mention any?—Those which I found most beneficial were the cold affusion and turpentine*; to which of the two it is difficult to ascribe the good effects.

Did you use mercury?—I did.

Blood letting;—Yes, by leaches, topical blood letting. Camphor I also used, and several other medicines. Calomel was reported to me as having done some good under the care of the garrison battalion surgeon, but I never found it myself of any use.

* On farther reflection, I conceive it very doubtful that the recovery of the two cases in which turpentine was exhibited, could be ascribed to that remedy, as they had continued to brave the disease some days previous to its administration.

Of those infected with the Plague, how many do you suppose recovered among the soldiers?—I can only speak as to De Rolle's Regiment; I think nearly one half.

Was there any Plague at Sasai?—None, nor at some other casals in the island.

To what do you attribute that?—To infected persons not having made their escape to those casals. *

Was there an order from the commader in chief not to feel the pulses of the Plague patients, under a fine of 80 days quarantine?—There was. I find now on referring to my notes, that I have made a mistake; the medical men were interdicted from feeling pulses, only under a penalty of quarantine for a considerable number of days; the mulct for feeling pulses (even through a tobacco leaf) being not less than 15 or 20 days.

Did you go among or near many persons afflicted with the Plague, or did you keep personally from them, except among your own soldiers?—I volunteered my services to examine the patients in the lazaretto, some of whom I saw and examined.

Do you recollect any who were ill in the lazarettos?—I rather think I was prevented from seeing the living cases of Plague within their wards † and that I examined more particularly the dead.

* Or to more vigorous restrictive measures.

† This is not rightly expressed; I only intended to say, that I did not

Do you consider dead cases capable of producing Plague?—From the general opinion which is abroad on this point, I should consider they are not so liable, if liable at all.

Has the quarantine in Malta been regularly attended to, prior to the breaking out of the Plague?—I have had no opportunities of judging of that; my attention to quarantine laws was not particularly arrested, till I saw danger in our neighbourhood.

Is it not likely to suppose that cases of Plague have frequently arrived in Malta, prior to the breaking out of the Plague?—I understood that it had frequently been known in the lazaretto, but was stopped by prompt precaution. I yesterday produced the title-page of a book, in which there was an engraving of a monument to the memory of a grand master in 1743, who had arrested the Plague.

Did you remain at Malta after 1813?—I think I left Malta in April or May 1814.

Was there a Plague in May 1814, at Malta?—I never heard it recurred in that year.

What was done with the clothes and bedding of the persons who died of the Plague?—I understood, generally destroyed; though in some instances, not until long after their being infected.

enter the wards to see the living cases; which I ought to have added, I saw sufficiently well from the outside.

Upon the whole, do you consider the Plague to be a disease propagated by contagion, like the small-pox and other eruptive diseases?—I do.

Do you believe it may be so propagated, independent of any influence of the atmosphere?—I believe it may.*

Do you consider insulation by the means of quarantine, the most effectual method of preserving against the Plague? —By far the most effectual.

Do you know of any cause of communication of Plague, besides contagion?—None that will explain its production and dissemination, except a contagion sui generis.

Explain your meaning of sui generis?—I believe it signifies whatever is peculiar to the thing spoken of, consequently the contagion of Plague is quite peculiar in producing the Plague. Take other examples; the contagion of the small-pox is peculiar in producing small-pox only; the contagion of the measles is peculiar in producing measles only; and so in like manner the contagion of the Plague is peculiar to itself, or what is termed specific.

By peculiar, do you mean that the contagion of the Plague will produce Plague, and the contagion of the small-pox, small-pox?—I mean that only.

Then you do not allude to the mode of producing the

* My sentiments have been given more distinctly on this head in chap. v.

effect?—We know nothing of the modus operandi of the contagion, it is quite inscrutible.

Do you wish to state something as to the arrangement for the guards?—I should have mentioned in my examination on this head, that some part of the police guards were enrolled in the month of July, by the gentleman placed at the head of the police.

Have you ever heard of the Plague in England?—I have.

Mention the year?—I have read of several having visited England, but my recollection respecting them is not distinct; I recollect most of that Plague which occurred in the year 1665.

Do you consider Dr. Sydenham's account of the Plague as the best?—I think Dr. Sydenham's account did not result from any very patient or philosophical investigation of the disease.

Does Dr. Sydenham consider it the real Levant Plague?—I think not; but it is so long since I read the work, that I cannot charge my memory with any of his observations.

Do you consider it yourself, as the real Plague of the Levant?—I do, decidedly.

Have you ever heard of Plague since that period?—I am not prepared to answer that question; whether it has visited England since or not, I should apprehend, could only be answered by those engaged about the health office.

If the expurgators of goods at the quarantine establishment have never received Plague from opening the bales from the Levant, even those which come with foul bills of health, should you not from thence conclude, that there was no matter of infection contained in the bales?—No; the caution enjoined in the operation of expurgation may be sufficiently great to prevent the reception of contagion of Plague, even though it existed; the intensity of the contagion may be so blunted by length of time, and by care, as not to be calculated to excite the disease readily.

Has it not astonished you, that for a period of 154 years, there should have been no occurrence of Plague in England?—I cannot say it astonishes me more with respect to England than other places. I find it has paid visits at the distance of long intervals of time to other countries as well as England; and we do not know enough of what constitutes aptitudes in persons to receive the contagion, in order to know under what circumstances the disease must necessarily be produced.

Do you consider the quarantine establishments in England to have been one of the causes of preventing Plague from being introduced?—I should think the quarantine establishment taken in all its bearings, abroad and at home, has had a great share in preventing the introduction of the disease

Do you suppose the corn is capable of producing infec-

tion, and therefore ought to be the subject of the quarantine laws?—On that point I am not able to speak; I do not believe it is considered an article of high susceptibility.

To what articles should you attribute the greatest probability of Plague infection?—I cannot be certain, but I should rather think woollen clothes and cotton; upon this part of the subject I would rather not answer; I am very doubtful with respect to the susceptibility of different articles.

Were the arrangements made at Malta, respecting the Plague in 1813, very expensive to Government, during the Plague?—I should think they must have been a very great expense; but I only speak from surmise, concluding from what I saw.

REPORT.

THE SELECT COMMITTEE appointed to consider the validity of the doctrine of Contagion in the Plague; and to report their observations thereupon, together with the Minutes of the Evidence taken before them, to The House;—HAVE considered the matters to them referred, and have agreed upon the following REPORT.

YOUR Committee being appointed to consider the validity of the received Doctrines concerning the nature of Contagious and Infectious diseases, as distinguished from other Epidemics, have proceeded to examine a number of Medical Gentlemen, whose practical experience or general knowledge of the subject appeared to Your Committee most likely to furnish the means of acquiring the most satisfactory information. They have also had the evidence of a number of persons whose residence in infected countries, or whose commercial or official employments, enabled them to communicate information as to facts, and on the

principle and efficacy of the laws of Quarantine; all the opinions of the Medical men whom Your Committee have examined, with the exception of two, are in favour of the received doctrine, that the Plague is a disease communicable by contact only, and different in that respect from Epidemic fever; nor do Your Committee see any thing in the rest of the Evidence they have collected, which would induce them to dissent from that opinion. It appears from some of the Evidence, that the extension and virulence of the disorder is considerably modified by atmospheric influence; and a doubt has prevailed, whether under any circumstance, the disease could be received and propagated in the climate of Britain. No fact whatever has been stated to show, that any instance of the disorder has occurred, or that it has ever been known to have been brought into the Lazarettos for many years: But Your Committee do not think themselves warranted to infer from thence, that the disease cannot exist in England; because, in the first place, a disease resembling, in most respects, the Plague, is well known to have prevailed here in many periods of our history, particularly in 1665-6; and further, it appears that in many places. and in climates of various nature, the Plague has prevailed after intervals of very considerable duration.

Your Committee would also observe, down to the year 1800, Regulations were adopted, which must have had the

effect of preventing goods infected with the Plague from being shipped directly for Britain; and they abstain from giving any opinion on the nature and application of the Quarantine regulations, as not falling within the scope of inquiry to which they have been directed; but they see no reason to question the validity of the principles on which such regulations appear to have been adopted.

14 June, 1819.

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